



Radboud University

Nijmegen School of Management

Ganz zur Ausschöpfung: the German war economy and corporate profiteering

Thesis by:

Sylvain Thöni (s4762169)

Supervised by:

Dr. Ivan Boldyrev

Word count (excluding references & footnotes):

26,275

In researching the German war economy during the Second World War, earlier researchers have found that the economy was only fully geared for war in the final years of the conflict. I posit instead that German economic exertions for war went to the utmost from the very beginning. The dual nature of the qualitatively different wars to be fought, against the Soviet-Union and the Anglo-Saxon Allies, has confounded this tendency. The conflict with the Soviet-Union demanded output of weaponry for the German army while the conflict with the Anglo-Saxon Allies necessitated far larger weapon systems (e.g. battleship, aircraft carriers and strategic bombers) for which the backward German economy lacked the productive capabilities. Corporate profiteering during the first years of the conflict facilitated the investments in such long-term productive capabilities. Only when the strategic situation definitely turned against Hitlerite Germany did policymakers adopt more coercive measures, including a curtailment of corporate profiteering, to boost short-term armament output, with which to hold off the advancing Soviets on the Eastern front, and later the Anglo-Saxon Allies on the Western front.

15th of July 2020

Table of content

| | |
|--|-----------|
| List of abbreviations | 2 |
| Introduction | 3 |
| Literature review | 7 |
| <i>The planned economy</i> | 7 |
| <i>A qualitative change in waging war</i> | 10 |
| <i>The war economy</i> | 11 |
| Direct procurement | 12 |
| Raw material & labour | 13 |
| <i>German war planning 1933-1939</i> | 14 |
| <i>The Blitzkrieg economy?</i> | 15 |
| <i>Hitler's war aims & needs</i> | 17 |
| <i>Siphoning savings</i> | 19 |
| Methodology | 21 |
| Case studies | 27 |
| <i>Invasion of Poland, September 1939</i> | 27 |
| <i>Fall of France & invasion of the Soviet-Union, May 1940 – November 1941</i> | 31 |
| <i>Battle of Moscow, December 1941</i> | 39 |
| <i>Battle of Stalingrad, November 1942 - February 1943</i> | 45 |
| Conclusion | 50 |
| References | 55 |

List of abbreviations

| | |
|--------|---|
| OKH: | Oberkommando des Heeres (army high command) |
| OKW: | Oberkommando Wehrmacht (high command of the armed forces) |
| TNA: | The National Archives of the United Kingdom |
| IMT: | International Military Tribunal |
| BEF: | British Expeditionary Force |
| POW: | Prisoner of War |
| BA-MA: | Bundesarchiv-Militärarchiv (German military archives) |

Introduction

The Second World War was the first largescale armed conflict that saw the widespread use of mechanized forces, by both the Axis and the Allied powers. The far-reaching mechanization of the military demanded an enormous strain on industrial resources and productive capacities, in order to both supply the armed forces with the necessary materiel, and to provide the means to operate and service them. The peacetime economies in all belligerent states were converted to war economies so as to contribute to the war effort. In February 1943, Joseph Goebbels asked for the conversion of the German state and economy to suit a “total war” (Goebbels, 1944, pp. 181) in which “we [Germany] must use our full resources, as quickly and thoroughly as it is organizationally and practically possible” (*Es muss ganz zur Ausschöpfung gelangen, und zwar so schnell und so gründlich, als das organisatorisch und sachlich überhaupt nur denkbar ist*)¹ (Goebbels, 1944, p. 181). Goebbels’ speech was delivered just after the gargantuan defeat which the *Wehrmacht* incurred after fighting for more than five months at Stalingrad². The setback laid bare the precarity of Germany’s strategic situation, since it was now facing the remainder of nearly the entire world in arms. A conversion towards an economy of total war thus seemed imperative, if anything were to be salvaged from this situation.

It could however be persuasively argued that the need to enact the aforementioned conversion was imperative far earlier³. Germany faced a situation in which it was confronted with the need to fight two wars at once. Firstly, there was the great struggle on land against the Soviet-Union, which was mainly fought by the *Ostheer*, Germany’s army on the Eastern front, and supported by elements of the *Luftwaffe*. Secondly, there was an entirely different war that needed to be waged against Great-Britain and the United States. This conflict would predominantly demand far-reaching claims on industrial production not by the army but instead by the navy and the air force. While Hitler had dictated an immediate halt to naval expansion following the outbreak of war on the 10th of September 1939, shelving the ambitious long-term plan to establish Germany as a major naval power (Tooze, 2006, p. 338), a future ‘battle of continents’ would demand both an oceangoing navy and a strong aerial weapon. Either type of war alone would already require tremendous quantities of industrial production. Germany’s need to pursue both wars at once thus demanded an even more dazzling mobilization of both the domestic war economy and those in the occupied territories.

¹ German originals of directly translated quotes will be provided whenever some meaning will be lost in translation. All other quotes for which this is not the case are as such directly quoted from English or translated by the author.

² The battle of Stalingrad would be Germany’s most severe military setback during the war, in which, over the course of several months, half a million Axis soldiers were killed while far more were rendered wounded or missing, or were taken prisoner (Bell, 2011, pp. 104-105).

³For instance, a situation in which Germany faced sufficient strategic deterioration to warrant a conversion to a total war economy would have been the moment in which the United States effectively sided with the Allies as a non-belligerent through the passage of the lend-lease act on the 11th of March 1941. Alternatively, such a deterioration occurred at the latest when the United States fully entered the conflict on the 7th of December 1941. The entry of the United States, either tentatively as a non-belligerent and definitively as a belligerent, coupled with the endurance displayed by the Soviet-Union against the first German onslaught, would have shifted the material balance of forces decisively in the favour of the Allies.

Post-war commentators have observed that Germany seemed to have held back far-reaching economic mobilisation, if not during the entire conflict than at least during the first years of the war (Kaldor, 1945; Milward, 1965; United States Strategic Bombing Survey, 1945, pp. 6-28). It is deeply puzzling and irrational from the perspective of the German policymakers, that they seemingly did not convert the German economy towards total war production as quickly as would be expected given the strategic situation. Even in these first years, when Germany still experienced a rapid succession of military victories, it must have been unequivocally clear that the greater strategic situation was deteriorating due to the involvement of both the Soviet-Union and the United States in the conflict. German policymakers did perceive the struggle as being one of national survival. In an *Oberkommando Wehrmacht* (OKW; the high command of the German armed forces) conference on the 19th of April 1938 it was noted that war in its absolute form is the violent conflict between two or more states that employ all means (IMT, 1949a, p. 48), and that as such the modern war becomes a national emergency and a battle for survival for everyone (ibid.). Because of these tendencies associated with modern warfare everyone has everything to win and everything to lose, and must in such employ everything (ibid.). Moreover, Hitler himself remarked that:

If the war is to be lost, the nation also will perish . . . There is no need to consider the basis even of a most primitive existence any longer. On the contrary, it is better to destroy even that, and to destroy it ourselves. The nation has proved itself weak, and the future belongs solely to the stronger Eastern people. Besides, those who remain after the battle are of little value; for the good have fallen (Bullock, 1962, pp. 774-775).

The war would thus either end in victory, or in a defeat even more total than the Carthaginian peace imposed on Germany under the treaty of Versailles in 1919⁴.

Given the risk of such a national humiliation, the apparent failure to convert to a total war economy is even more startling. Especially the retention of the profit motive for German producers is remarkable. In effect any retained profits on the part of private businesses would translate into some additional armaments not being supplied to the front. To be sure, the government did levy heavy taxes on corporate profiteering, especially when compared to contemporary corporation taxes. For instance, corporation taxes amounted to 40% in 1941 and were subsequently raised to 50% and 55% in mid-1941 and beginning 1942 respectively (Aly, 2006, p. 78). In addition to taxation, industrial producers were typically given fixed prices for their production with only a small margin of profit being calculated over the costs of capital employed. While additional profits generated by cost-saving measures could also be retained by producers, this device did impose a constraint on corporate profiteering from the war.

⁴The tendency to regard war as inherently absolute and hence a struggle for existence might partially be informed by a rather narrow interpretation of Clausewitz's *On War* by Hitler (Baldwin, 1981, p. 15).

Throughout the war even more methods were attempted to claw back corporate profits, but the very necessity of the imposition of these myriad different instruments indicates that businesses could expect to retain at least a sizeable fraction of their earnings received from war production.

Indeed, German businesses and high policymakers appeared to enjoy a (temporary) alignment of interests in firstly rebuilding the German war industry and secondly in pursuing the war effort. Tooze (2006, pp. 99-134) carefully documents the role of large businesses in facilitating and supporting the policies of the national-socialist party during the early years of the national-socialist regimes. It must be conceded that the initiative typically came from national-socialist policymakers and not from the side of the large businesses. When asked however, they readily participated in the regime's policies, not less to their own advantage. Private corporations and businesses thus collaborated with national-socialist policymakers, being able to reap profits both before the start of the war and after hostilities had commenced. It remains puzzling why corporate profiteering was allowed in the first place, since it would clearly have a depressing effect on the German war effort in the short term.

In the following text I will offer an alternative, perhaps slightly unintuitive, explanation for allowing corporate profiteering. Instead of arguing that Germany could not demand enough sacrifices from its domestic economy to pursue the war, I work from and further build on the notion that German economic preparation and mobilization for war went to the utmost limit (Overy, 1988a; Thomas, 1966, pp. 413-415). Within this framework, the apparent failure to restrict corporate profiteering was not a sign of weakness but intentional. Germany needed her businesses to accumulate surplus capital in order to employ it in the construction of long-term productive capacities, which would allow her to fight the battle of the continents against the Anglo-Saxon allies. The qualitative difference between the wars fought in the East and in the West would thus require a complex system of economic mobilization, which might be seen as illogical in a more superficial review.

In his volume on the *Political Economy of War*, professor Pigou expressed the hope that “the only political economy that will ever again have relevance to practical affairs [is] the Political Economy of permanent and assured peace among the great nations of the world” (Pigou, 1921, p. 3). While Pigou's hopes must have been firmly dashed by the events of the Second World War, the subsequent half of the 20th century saw the emergence of what has been framed as the *Long Peace*, the unprecedented absence of great power wars (Gaddis, 1986). While the *Long Peace* has extended firmly into the 21st century, it is unfortunately not unforeseeable that great power wars will occur again. The United States' post-1989 hegemony seems to be increasingly in decline (Chase-Dunn, Kwon, Lawrence & Inoue, 2011; Walt, 2018, pp. 21-53) while other great powers are on the ascent, notably China (Allison, 2017, pp. 3-27; Friedberg, 2015; Mearsheimer, 2014, pp. 360-412; Yueh, 2013) and Russia (Daalder, 2017; Fakiolas &

^sFor instance, the German chemical and pharmaceutical monopoly *Interessierten Gemeinschaft Farben* (henceforth IG Farben) maintained a close relationship with the national-socialist party, financing its campaign in 1933 while later, during the war, being given the opportunity to “annex the leading chemical companies in the occupied territories” (López-Muñoz, García-García & Alamo, 2009, p. 70).

Fakiolas, 2009; Walt, 2018, pp. 31-33). An increasingly multipolar international state system is inherently more instable than a bipolar or a unipolar state system and is therefore more prone to outbreaks of armed conflict (Mearsheimer, 2014, pp. 334-360). The possibility of a future great power war can thus not be definitely excluded. A thorough understanding of the corollary of the “Political Economy of permanent and assured peace” (Pigou, 1921, p. 3), namely the political economy of war, might thus remain useful in the future, even though it is to be thoroughly hoped that such situations will not arise.

Regardless however of whether the resurgence of great power wars reiterates the practical relevance of a thorough understanding of the war economy, such an understanding might prove useful in dealing with large non-military crises to which the peacetime free-market economy has no adequate response. The contemporary crisis surrounding the containment of SARS-CoV-2 is one such crisis. It emphasizes that, should the need arise, some countries will resort to measures that properly belong within the realm of the war economy. For instance, the United States has invoked the *Defence Production Act* in order to procure some necessary medical appliances (Bushey, Edgecliff-Johnson & Stacey, 2020). A more symbolic analogy can be drawn with Italy’s decision to rush a large number of doctors into immediate service by scrapping the last examinations for final-year medical science students (Coleman, 2020). The practice is eerily akin to the convention of commissioning final-year cadets into officer-rank on the outbreak of war (Beckett, Bowman & Connely, 2017, pp. 54-55; Clark, 2013, p. 463). Such a similarity goes to show that some measures of the wartime economy need not necessarily be restricted to dealing solely with war.

In the remainder of this paper, I seek to examine how corporate profiteering in Hitlerite Germany could co-exist with the demands for total mobilization. Firstly, I will present a more general overview of the planned economy, a category to which every war economy must to a certain extent belong. Subsequently, I outline the war economy as a concept, in comparison to a peacetime economy, and apply this general concept to German war planning. Then, I will continue by outlining Hitler’s political aims and the corresponding type of military apparatus that would be needed for these aims. It is my conviction that such a military apparatus could not be produced nor sustained without a more advanced war economy. In order to construct the necessary infrastructure for building this military apparatus vast investments were needed, even after the outbreak of hostilities in 1939. The necessary investments could only be fully realised by syphoning off both private savings and corporate profits. This is due to the fact that Germany had foregone itself the possibility of allocating productive facilities originally belonging to the private economy to the government, through the use of either rampant inflation or punitively high taxation. In essence, corporate profiteering would be desirable, as it would allow Germany to fund an advanced military-industrial complex with which to eventually fight a long-lasting war with the Anglo-Saxon powers. I will defend this line of reasoning in four case studies which reflect different changes in the strategic with which Hitlerite Germany saw itself faced during the war.

In doing so I show that Germany was content to let profits accumulate during the period in which she enjoyed a short-lived hegemony in Europe. Only when the strategic situation deteriorated did Germany choose to drastically curtail corporate profiteering while also employing ever more coercive and cruel methods to sustain the war economy.

Literature review

The planned economy

The German economy was increasingly structured along the lines of a planned economy, after the national-socialist party seized power in 1933. This restructuring of the economy was necessarily not explicitly espoused since this would go against the ideological tenets of national socialism. Hence openly, the national-socialists railed and propagandized against the planned economy that existed in the Soviet-Union (Waddington, 2007). However, even while Germany publicly positioned itself as the political antithesis of the Soviet-Union, it found out that to an ever-greater extent it had to resort to the methods of the planned economy. As will be shown in greater detail below, the national socialists had ambitious geopolitical designs for which a large military and industrial apparatus was required. Their goals with regard to the economy were thus extra-economic; the economy served merely as a method to produce the military means with which to achieve the geopolitical ends that were entertained by the regime.

A useful perspective on this kind of economic policy, that is centered on extra-economic goals, can be found in *Structural Changes in the Socialist Economy*, the seminal work of Yurii Yaremenko, an economist from the Soviet-Union (Leeds, 2019). He theorized on the economic situation of the late-stage Soviet-Union in the 1980s, but his theory could be retroactively applied to the situation of Hitlerite Germany. This is due to the fact that both the late-stage Soviet-Union and Hitlerite Germany practically only entertained the extra-economic goal of arms procurement, which for the Germans was a necessary prerequisite for waging a number of wars of conquest. Moreover, Yaremenko's theory was written largely in abstraction since he could not openly criticize the Soviet leadership (Leeds, 2019, p. 143). As such, his theory is more readily applicable to other states that relied on a planned economy.

One of the most important aspects of the planned economy is the increasing irrelevance of the notion of demand. Instead, the "economy [is] determined by the planners' priorities" (Leeds, 2019, p. 134). National leaders can adopt the planned economy in order to catch up on the development of productive facilities that are already attained by other more industrially advanced states. Germany fits this description well since it was industrially inferior to, for instance, Great-Britain and outrightly backward when compared to the United States⁶. The planner assigns priority to specific sectors of the economy over others, devoting key resources such as high-quality materials and high-skilled labour to

⁶ Pro-capita income in Germany was only 66% of that earned in Great Britain and merely 46% of that in the United States. Moreover, real wage increases had been paltry over the period of 1913-1938, at only 9% compared with 53%, 33%, and 28% for the United States, Great Britain and France respectively (Svennilson, 1954, p. 235).

these sectors at the expense of others. Parts of the economy are thus to a certain extent starved so as to allow the rapid build-up of other sectors, which are perceived as being more important by the planners. With the priorities determined by the leadership, there would be no possibility for private individuals to spend their earnings as they would see fit. Profits would lose their allocational purpose in determining where capital would be best invested, since by definition it is the planner that decides on investments instead of private initiative. Similarly, savings would accumulate indefinitely, since there would be nothing on which individuals could freely spend their discretionary income.

Yaremenko's analysis of the planned economy also to a certain extent coincides with the analysis of the German centrally administered economy in the ordoliberal tradition. In the first post-war years, ordoliberal economic theorists mainly sought to analyse the German war-economy to show the continuities existing in the economic model of Hitlerite Germany and the economic order imposed on (West-)Germany by the Allied control authorities (Fèvre, 2018). The first ordoliberal post-war author to set forth such an analysis was Walter von Eucken (Eucken, 1948a), who had already been intricately involved with analysing the German war economy during the conflict, mostly for suggesting methods for a transitioning towards a peacetime economy (Rieter & Schmolz, 1993, pp. 96-103). He noted that the German price freeze of 1936 (White, 2012, p. 158) had rendered the exchange economy all but obsolete, since it was scarcely possible to effectively coordinate economic activities when the prices of, for instance, intermediate goods involved in such activities were greatly outdated and did no longer reflect the true value of such goods. Producers could as such not calculate their true costs of production and would be unable to rationally determine how much they should produce. Since prices were no longer of paramount importance in coordinating economic activity, the locus of economic primacy shifted, so that "for the economic process as a whole, it was not the plans and actions of individual businesses and households that were decisive, but the plans and orders of the central authorities" (Eucken, 1948a, p. 80). As in Yaremenko's theory this allowed policymakers to shift the focus of the economy from the purely economic activities that would result under conditions of free exchange towards extra-economic goals entertained by the state, such as investments in rearmaments.

Specifically, the centrally administered economy might provide the regime with an effective method to substantially increase investments within the economy, since the typical factors that act as moderating break on investments that are present in an exchange economy are absent in the centrally administered economy (Eucken, 1948b, p. 174). This is due to the fact that calculations pertaining to the economic rationale of further investments, focused on for instance the prices that have to be paid for the inputs necessary for the investments and those that can subsequently be garnered by selling the finished products made possible by the investments, cannot be computed in the centrally administered economy where prices have ceased to be accurate reflections of economic value. The decision whether or not to engage in investments no longer primarily rests with producers themselves. Instead investments are outlined for the long-term by the relevant planning authorities whose only considerations are the extra-

economic goals that they entertain and the necessary prerequisite consumer goods that they must furnish to the population at large so as to ensure that this population remains physically capable of realizing the investments projects. The latter consideration pertains to the minimum standard of living that must be furnished to labourers, in terms of food, clothing and shelter, to ensure that they remain physically capable of efficient production. This *Existenzminimum* is of primary importance for understanding the (German) war economy and will later be revisited in analysing German planning for the war. Specifically, it will be shown that reducing consumption so that German consumers would live on an *Existenzminimum* was a conscious German policy to enable diverting as much as possible excess purchasing power to the war effort from the very start of the conflict. Due to the price freeze that had been decreed in 1936 and the eventual rationing of consumer goods on the outbreak of war, which was an essential prerequisite for reducing consumption to the *Existenzminimum*, there was a tendency towards forced savings on the part of the German consumers (Fèvre, 2018, p. 69; Röpke, 1947), which resulted in the accumulation of large amounts of monetary reserves that the German state could tap into. Röpke labelled this concept repressed inflation in which the government “forbids the excess of demand to result in increased prices, costs and exchange rates” Röpke, 1947, p. 243). The concept of repressed inflation and its attendant result of forced savings, especially with regard to the question of whether these monetary accumulations were to be forcibly seized or stealthily siphoned by the German state, will also be dealt with in greater detail below. Finally, the absolute precarity of the German situation with regard to its labour force later in the war can also be discerned by decisions to attempt to extend an extremely bare *Existenzminimum* to demographic groups interned in concentration camps that were originally slated for extermination.

An important problem associated with the allocation of investments by planning authorities is however that it is supremely difficult to satisfactorily estimate and plan complementary investments in a centrally administered economy (Eucken, 1948b, p. 178). Specifically, there will likely be overinvestments in certain sectors where the new capacity generated cannot be fully utilised due to underinvestment in other complementary sectors. As an example, Eucken cites the infrastructural projects in Germany which resulted in the construction of a nationwide system of *Autobahnen* while the state of the Germany petroleum industry constrained the use of automobiles so drastically that the newly built *Autobahnen* would never be fully employed by commercial users (ibid.). It is simply impossible to plan the exact quantities of investments necessary in each and every sector of the economy to gain the type of optimal equilibrium results that coordination through market mechanism can attain. However, it could be argued that such detailed planning and coordination for a limited set of different sectors might be possible. As such, the centrally administered economy would not function well in setting investments rates in the myriad of different sectors that are important for the efficient production of desirable consumer goods but might just be planned for more specific extra-economic goals.

All in all, the ordoliberals sought to strongly critique the centrally administered economy as being fundamentally unable to provide efficient solutions for a mass-consumption society in peacetime. The important caveat discernible here however is that the centrally administered economy, just like in Yaremenko's analysis, might still be effectively employed for attaining certain extra-economic political objectives, especially the rather technical objectives with regard to the maximization of armaments production that Hitlerite Germany entertained before and during the war.

Finally, the role of the profit motive remains to a certain extent ambiguous in the centrally administered economy. The usurpation of economic primacy from consumers by the central authorities necessarily does away with the allocational role that profits exercise in an exchange economy. Decisions to invest in the one sector instead of the other are no longer made by evaluating the relative profitability of both investments options through prices and costs since such figures are no longer grounded in real terms of scarcity. Instead, investments are laid down by the state. Entrepreneurial freedom is as a consequence highly curtailed. However, the German regime did not expropriate property owners by fully nationalizing certain industries; private ownership of capital remained the norm in Hitlerite Germany and capital owners could still garner a sizeable profit over their investments. As such, profits did retain their incentivizing role in stimulating the "entrepreneurs' technological and managerial skills" (Spoerer, 1996a, p. 21). Private property thus remained largely untouched during much of the war⁷. This seemingly is the defining differentiation between the centrally administered economy of Germany and that of the Soviet-Union in the 1930s, since in the latter property owners were fully expropriated so that key industries could be nationalized (Spoerer, 1996a, p. 21).

The war economy can be interpreted as a variation on the centrally administered economy in which a large share of productive facilities is allocated to the extra-economic objective of pursuing the war effort. Before it is possible to further discuss the war economy in more detail however, a brief deviation is necessary to elucidate why the modern waging of war necessitates the existence of large industrial facilities and as such a vigorous national economy.

A qualitative change in waging war

The First World War (1914-1918) marked a decisive break in the waging of inter-state warfare. For the first time in history, the number of weapons, ammunition, and petrol, oil and lubricants (POL) needed for all armies involved in the conflict exceeded the amount of subsistence that these armies had to either be supplied with from the home country or had to confiscate from the surrounding lands (Creveld, 2004, p. 233)⁸. Thus, the armies involved in the conflict carried with them into battle far

⁷ This necessarily excludes the discriminatory expropriations practiced against the Jewish population.

⁸ In all previous conflicts, the tonnage necessary to supply food and fodder to the armies involved had greatly outweighed the number of armaments that needed to be supplied. In the most recent great power war, the Franco-

greater amounts of equipment and baggage than ever before. The number of artillery guns available in the German army in 1914 had more than quintupled vis à vis the number available to the Prussian-led German confederation in the Franco-Prussian war (Crevelde, 2004, p. 110). Moreover, all of these guns fired heavier shells faster than their predecessors, thus quickly expending available munitions. The thousand shells in stock per gun at the start of the war were depleted within six weeks after the hostilities began (Crevelde, 2004, p. 110; Ludendorff, 1921, pp. 15-17). For the first time in history, the belligerent states in an armed conflict were faced with enormous munition crises, due to the failure to directly adjust their peacetime economies to the needs of industrial warfare (Cawood & McKinnon-Bell, 2001, pp. 40-68). An important difficulty for military planners associated with this reversal of the dominance from subsistence supplies to non-subsistence supplies is that all of the latter cannot be found in the surroundings lands, to be requisitioned at will by any military commander so as to supply his forces. Instead, all of these non-subsistence supplies had to be manufactured in the own country and brought forward to the front from a base in the hinterland. Thus, for the first time warfare was firmly extended into the realm of economic production (Stern, 1960; Wiedenfeld, 1936, pp. 9-10). This was recognised by the contemporary German industrialist Walther von Rathenau who opined that “even in war labour is now more important than bravery” (Rathenau, 1908, p. 20). To ensure that all necessary economic sacrifices were made to supply the armies fighting at the front, all of the belligerents in the First World War, and subsequently also in the Second World War, enacted war economies.

The war economy

A war economy can be defined as the “system of producing, mobilizing and allocating resources to sustain the violence” (Le Billon, 2005, p. 288). In such a system, individual preferences, that are typically exercised in the free-market economy, are generally overridden by the national objectives of military production, which coincides with the increasing irrelevancy of the notion of demand in the centrally administered economy. Moreover, the war economy needs to be adjusted to some additional and sudden exogenous shocks that do not occur during peacetime (Neurath, 1973, p. 126). For instance, Germany had to reconfigure its economy, during both the First and the Second World War, so as to best cope with the hardships imposed by a naval blockade. During the First World War the British naval blockade prevented foodstuffs from directly reaching Germany, and further diminished domestic agricultural output through reduced imports of fertilizers, agricultural machinery and feeds (Huber,

Prussian war (1870-1871), ammunitions had made up only one percent of total supplies expended (Crevelde, 2003, p. 233); the average Prussian soldier fired only 56 cartridges during the entire war (Moltke, 1911, p. 303), and only 199 artillery rounds were expended per gun during the conflict (François, 1913, p. 30). Scarcely any additional munitions needed to be supplied to the front since the munitions that the soldiers carried themselves or brought up in the army’s own baggage train were more than sufficient. Moreover, the deterioration of rifles and guns, save from destruction or capture by the enemy or purposeful destruction, was negligible due to the relatively sparse use of these weapons. Resupplying armies with new weapons was as such not necessary. The main difficulty in pre-20th century wartime logistics were thus found in feeding the armed hordes involved, not in arming them as such.

1920, p. 131). Other examples of exogenous shocks imposed by the enemy included strategic bombing, sabotage, and the direct loss of productive facilities through invasion. Finally, every state had to cope with the productivity loss attendant on large numbers of able-bodied men, otherwise employed in agriculture or manufacturing, being drafted into the military (Pigou, 1921, pp. 4-16).

The most salient feature of the war economy is the extent to which the government channels funds into pursuing its war aims. The two largest industrialized states in the First World War, Great Britain and Germany, appropriated on average more than a third of their national income to support the war effort (Balderston, 2010, p. 218-223). While this ratio was lower for comparatively less industrialized states, such as France, Austria-Hungary, and Russia, even these states commanded more than a quarter of their national income on average (ibid.). The transition towards a war economy thus comprises an increased mobilization of the national economy and a wholesale reorientation towards war production. This mobilization includes both the direct procurement of materiel needed by the armed forces, and the increased intervention in managing the state's access to labour and raw materials.

Direct procurement

To receive the necessary direct procurement of arms and ammunitions for her armies and fleets, the government could theoretically avail itself of simply paying for the necessary production in the marketplace, to be funded through either taxation or domestic and foreign borrowing. However, it is important to note that any warring state would also need to reconfigure its production, so as to optimally suit military needs since “a great part of the war needs of governments differs from the peace needs of civilians” (Pigou, 1921, p. 65). This great surge in government spending and the attendant reconfiguration of economic production towards the production of the materiel directly necessary for the war effort cannot, almost by definition, efficiently occur in a free market economy since,

had the government been forced to buy all the services and things it needed in a free market, people in a position to sell to it could have demanded terrifyingly high prices, and so secured, at the national expense, fabulous profits (Pigou, 1921, pp. 67-68).

The abolishment of the *laissez-faire* doctrine must thus to a certain extent be achieved within the national economy. The government cannot solely rely on increased taxation and borrowing so as to increase the effective demand for the materiel it needs, while simultaneously decreasing the effective demand for all civilian consumption (Pigou, 192, pp. 63-70). If it were to do so a costly reconfiguration would certainly take place, but too slowly. There would be manufacturers that would procrastinate the reconfiguration due to not being willing to bear the risk of investing in production facilities that would be rendered redundant at the very moment the guns would fall silent. In lieu of taxation and borrowing to pay for increased spending, the commandeering of the necessary productive resources and agents

would thus to a certain extent be essential. Such commandeering of productive agents naturally occurs with the forced conscription of most of the military-aged men in the society but can be extended further in the war economy. As such, the government takes on increased roles within the national economy, and actively steers production within the state to best suit its own purposes. Such a commandeering of resources can be achieved by stifling civilian demand to the advantage of that of the government. The government can, through its coercive powers, vastly increase taxation so that she appropriates for herself a larger part of the total production in the country. A similar effect can be achieved through engaging in seigniorage, the artificial expansion of the country's monetary base in favour of the government, or a strong reliance on wartime loans or government bonds. All of these measures would ensure that the government has a greater share of the state's productive facilities at her command and can orient these facilities for the types of production that are necessary to sustain the war effort.

Raw material & labour

In addition to direct procurement there is another field in which governmental intervention strongly increases during a transition towards a war economy; the control over raw materials and labour. While not immediately contributing to the combat strength of the armies in the field, these dimensions reflect the long-term ability of the state to carry on the war. In the end, any country that either exhausts its stock of raw materials (or means of obtaining them) or forfeits the greater amount of its labour cannot carry on the production necessary for the immediate procurement of materiel to the front. As such, it becomes imperative to ensure that ample supplies of raw materials and stocks of labour remain available within the own territory, and that means of restocking these supplies are continuously available. This was a concern of heightened importance for land-locked Germany, which was immediately navally blockaded by its adversaries in both the First and the Second World War.

To ensure adequate supplies of raw materials, far-reaching interventions in the economy are called for. Means must be found to either economize the use of raw materials, or to develop synthetic substitutes that would never be profitable under peacetime circumstances. The latter option is especially difficult, since the development of such techniques cannot be done within a few months or even years, and as such it becomes necessary to invest in these techniques long before hostilities break out. The German government for instance, greatly stimulated the technological research into hydrogenation, necessary for the conversion of coal into petrol, and the production of synthetic rubber during the interwar years (Tooze, 2006, pp. 115-120), even when there was no economic rationale to do so⁹. Further

⁹ The private interest in hydrogenation as a means of synthesizing fuel was dependent on the belief, held in the 1920s, that the world's oil wells would relatively soon run out. The increased search for new sources of oil however yielded more than enough newly discovered stocks of the commodity, which led to a collapse of its price (Yergin, 1991, pp. 207-252), thus removing the economic rationale for the relatively expensive hydrogenation. The research into hydrogenation by IG Farben was only carried on by virtue of the German government taking an interest in the technique (Tooze, 2006, pp. 116-117).

methods of economization on raw materials include the use of export controls, the imposition of rationing on the the civilian population, and requisitioning from occupied territories. Clever methods of ensuring that less materials are used in the own country could also add to saving raw materials, which was the rationale of the British government when it implemented the Daylight Savings Act in 1916 (Redmayne, 1923, p. 77).

Labour might be found by actively prohibiting labourers from engaging in certain activities that are deemed nonessential to the war effort, conscripting women and children into the labour force, and employing foreign workers or forced labour. Once again, the government forcefully intervenes directly into the national economy and in doing so distorts the functioning of the free market. Large amounts of labour might be freed by prioritising certain industries over others, and as such retraining the workers in the now redundant industries. Such retraining programs were used in Germany between 1938 and 1939 to increase the number of available workers in heavy industry and engineering (Gillingham, 1986, pp. 427-428).

The war economy thus saw profound changes when compared to peacetime free-market economy. When the country was mobilised for war, the government would exercise a far greater degree of control of domestic production processes, would allot herself a far larger share of the overall production, and would ensure that the long term prospects of carrying on the war as regarded the supply of raw materials and labour would be safeguarded. The German war economy during the Second World War would be no exception to this general typology. Indeed, German war planners had long before contemplated the lessons learned in the First World War and would seek to apply these antecedent to any outbreak of an eventual conflict.

German war planning 1933-1939

That the economy was a vital link in the waging of modern warfare was recognized by German war planners immediately after the First World War. Wilhelm Groener, wartime general and Weimar politician, recognised that in case of war “it is necessary to organise the entire strength of the people for fighting and working” (Fensch & Groebler, 1971, as cited in Overy, 1989, p. 97). As such, even during the years of the Weimar-republic (1918-1933) German war and economic planning saw a marked revival (Geyer, 1980; Stern, 1960). German economists coined the phrase *Wehrwirtschaft* to denote “a will and endeavour which aims at superiority over the enemy in a future war in the economic field and by economic methods” (Scherbenig, 1938, p. 8). More concretely, Weimar policymakers accelerated secret rearmament processes after 1928 in violation of stipulations under the Versailles treaty (Carroll, 1968, pp. 54-71; Habeck, 2014, pp. 1-205; Hayes, 1980). When the national-socialist party came to power in 1933, it thus found a number of officers and economists who had laid the theoretical, if not the material, foundations for a national revival. The national-socialists under Hitler greatly accelerated this military and economic build-up, and to an ever-greater extent flaunted international treaties in doing so.

On the 16th of March 1935, Germany openly overturned its military restrictions under the Versailles treaty of 1919 and announced both rearmament as well as the reintroduction of conscription in public (Fischer, 1995, p. 408). On the 7th of March 1936, German forces reoccupied the previously demilitarised Rhineland (Bouverie, 2019, pp. 83-93). Apart from some token diplomatic protests, neither action elicited a meaningful response by the international community (Overy, 1989, p. 102). Up until that moment, it was not fully clear what Hitlerite Germany's foreign policy goals were. A territorial revision of Versailles to a certain extent seemed in order provided that Germany, once reinstated as an equal in international politics, would subsequently adopt a reasonable stance on the international stage. It was wholly unclear however whether such a revision would be enough to satisfy German territorial ambitions.

The Blitzkrieg economy?

What Hitler specifically wanted to achieve on the world stage, and hence what type of military and economic apparatus he envisioned to need, has even after the war remained a point of considerable academic controversy. The debate mainly centered on the question of whether Germany aimed for rearmament in width or in depth. A number of authors have sought to prove that it was the former to which Germany aspired; rearmament in width, which in substance aims to build as large as possible military forces, with which to pursue short but intense wars. An economy structured along these lines could embark on short wars of plunder, with which to keep the German population satisfied, thereby indefinitely postponing an internal crisis caused by Germany's severe economic problems (Bloch, 1976; Mason, 1975). In doing so these authors draw *post hoc* analogies between Germany's tactical method of waging war, and its approach to structuring its war economy. In this strand of thought, the German war economy was conceived as conforming to the same tenets of the Blitzkrieg-doctrine that had brought the *Wehrmacht* its overwhelming successes on the battlefield (Kaldor, 1945; Milward, 1964; United States Strategic Bombing Survey, 1945, pp. 6-28). The economy was to be structured so as to facilitate a limited number of short wars, while leaving civilian consumption as untouched as possible. The aim of leaving civilian consumption untouched initially seems to be in conflict with that of building an as large as possible military apparatus. However, for rearmament in width the size of the armed forces as such is of paramount importance while the ability to maintain such formations over longer periods of intensive and exhausting warfare is deemed unnecessary. The role of these large armed formations was dual. Firstly, the large number of formations, for which every newly produced armament is directly added to front-line strength, were to be used for the type of foreign policy that Germany practised until 1939 which implicitly rests on the treat to commit force in order to gain diplomatic concessions. Secondly, if the armed forces were to be used on the battlefield their overwhelming numbers and technological superiority would quickly bring military victory, thus eliminating the need to build up a national industry specifically capable of prolonged production of military materiel. In the Blitzkrieg

economy rapid reconfigurations between different types of arms production, and more importantly between military and civilian production would be possible. Thus, it complies with the idea of a rearmament in width, with the largest number of armed forces ready for only short periods of hostilities, instead of rearmament in depth, which emphasizes the need to permit the pursuance of a long war (Milward, 1964). The focus on rearmament in width would also explain the inability of the German war economy to convert to the realities of total war, since it is assumed that German military and economic doctrine had consciously evolved to focus on short but intense forms of armoured warfare which would quickly topple any adversaries.

The idea of the Blitzkrieg economy has a certain superficial appeal but does not hold up to greater scrutiny. Arguing that “Germany relied on a greater volume of armaments than her opponent at a particular point in time” (Milward, 1967, p. 135) is certainly correct in a narrow military tactical sense but does not hold when extended to cover the approaches taken to economic production¹⁰. Moreover, the idea of the Blitzkrieg economy is premised on the assumption that national-socialist policymakers were heavily influenced by short term political or economic interests, instead of more long-term planning. For instance, it presupposes the belief that national-socialist policymakers wished to shield civilian consumption from the war. This idea is however incoherent; not only was civilian consumption heavily curtailed after 1933 in favour of military build-up (Overy, 1989, pp. 110-111) but national-socialist policymakers also indicated on multiple occasions that they would not refrain from asking far-reaching sacrifices from the population for the greater good of the state. Hitler stated that “[w]ar does not frighten me. If privation lies ahead of the German people, I shall be the first to starve and set my people a good example” (Carroll, 1968, p. 89). Given the utter ruthlessness displayed to the populations in the occupied territories, and especially Jewish, disabled or homosexual people or prisoners of war on the part of the national-socialist regime, such a harsh stance towards the own population is clearly conceivable.

¹⁰ An even more serious misreading of historical facts is the notion put forward by the United States Strategic Bombing Survey (1945, pp. 6-7) that Germany had no use for a large-scale economic mobilization upon the outbreak of war because any and all of her enemies could be easily and inexpensively defeated. This would be due to the inherent inferiority of Germany’s adversaries and through the Wehrmacht’s superior *Blitzkrieg* strategy. The idea that *Blitzkrieg* was a carefully honed doctrine successfully developed and perfected by the *Wehrmacht* antecent to the outbreak of war is however a fiction. While it is true that German doctrinal developments took place continuously during the interwar years (Habeck, 2014; Posen, 1984, pp. 179-220), they were not fully adopted by the German high command either before the invasion of Poland in 1939 or France in 1940. What has been coined “*Blitzkrieg*” by the foreign press was largely an *ad hoc* invention by a number of relatively junior officers before the invasion of France in 1940 (Mearsheimer, 1983, pp. 99-134; Zetterling, 2017). The eventual adoption of the *Blitzkrieg* against France was moreover premised on chance: plans for a more traditional invasion as early as the 17th of January 1940 were rendered impracticable due to an airplane carrying copies of the plans crash-landing in allied territory. Only the subsequently revised plans for an invasion in May 1940 would ultimately incorporate the tenets of the *Blitzkrieg* strategy as espoused by generals Manstein and Guderian.

Hitler's war aims & needs

Despite the existing controversies regarding Hitlerite Germany's war aims, I believe that it can be convincingly argued that national-socialist policymakers were planning to engage Germany in a series of lengthy wars of attrition in the future instead of wishing to only embark on short wars of conquest. As such, building an economic apparatus that adhered to the tenets of the *Blitzkrieg* economy would not suffice. Instead, these wars would necessitate a policy of rearmament in depth, in which the necessary productive capabilities exist to quickly replace losses to forces due to either combat or attrition. This form of rearmament would in turn need to be sustained by a strong war economy. A policy of rearmament in depth was essential for Hitler's future plans from their very inception, which were never limited to merely revising the treaty of Versailles, uniting the German speaking peoples into one state or even gaining continental hegemony in Europe. More ominously however, they also included the preparations necessary to achieve world dominion (*Weltmachtstellung*) in the more distant future (Hauner, 1978; Hildebrand, 1971; Michaelis, 1972; Michalka, 1980, pp. 172-176; Stegemann, 1980; Thies, 1976/2012; Weinberg, 1981; Zipfel, 1972). In this scheme, the defeat of France, and the colonization of Eastern Europe and the Soviet Union, out of a desperate search for *Lebensraum*, were merely the preliminary stages of this programme. "Germany", Hitler stated, "will either be a world power or there will be no Germany" (Hitler, 1925/1938, p. 742).

The aim of achieving world power status does away with the notion that a far more limited military and economic apparatus would have been sufficient to attain Hitler's more immediate objectives. The earlier view that Hitler was only interested in gaining *Lebensraum* in the East and was as such fundamentally disinterested in a struggle with the Western democracies (Taylor, 1961; Trevor-Roper, 1953) has been increasingly discredited. *Weltmachtstellung* "involved both large-scale overseas expansion and the building of a fleet capable of challenging the navies of the Anglo-Saxon powers" (Michaelis, 1972, p. 357). Thus, the economy had to be organised in depth in order to allow it to sustain a prolonged war of attrition. Moreover, such a war would need to be waged with weaponry that would be qualitatively different from that which German heavy industry could produce in large quantities, either at the time that Hitler came to power or at any other moment during his rule.

Germany thus faced a strategic dilemma with regard to the production of weaponry for the war, especially after hostilities had broken out in 1939. Germany found itself fighting a land war against France, while simultaneously waging a war predominantly contended at sea and in the air against Great Britain. The strategic dilemma widened in 1941; even though France was knocked out of the war quickly, Germany went to war with the Soviet-Union in June 1941, while the United States joined the war as a non-belligerent in March 1941 and finally as a co-belligerent in December 1941.

The two struggles required vastly different forms of industrial output, mainly discernible on the timeframe of production necessary. On the one hand, for pursuing the Soviet-German war emphasis had to be put on the production of armoured vehicles, artillery, trucks, infantry weapons, ammunition, and

aircraft capable of fulfilling a close-air-support role. At the risk of oversimplifying matters, this kind of production was mainly short-term oriented and required as much as possible output within the first upcoming weeks or months in order to vigorously pursue and hopefully quickly end the war in the East. On the other hand, Germany faced a strategic standoff with the Western allies in which it primarily needed armaments that would allow it to wage a ‘war of continents’, which would necessarily take a long time to develop and produce. Such weapons systems could include, for instance, an oceangoing surface fleet (requiring an ample fleet of battleships, cruisers, destroyers and aircraft carriers), a strategic air arm of the *Luftwaffe* (requiring the development of a viable long-range strategic bomber and accompanying escort fighters), the full-fledged development of the (intercontinental) ballistic missile or the successful weaponization of atomic theory. The need to develop these types of weapons coincided with Hitler’s aforementioned war aims and Germany’s rearmament planning. Before general war broke out in September 1939, Hitler had aimed at only readying the *Luftwaffe* in 1942 (Overy, 1975, pp. 779-783), the fleet between 1944 and 1946 (Dülffer, 1973, p. 498; Hauner, 1987, p. 27; Homze, 1976, pp. 242-250; Ruge, 1957, p. 27; Salewski, 1970, p. 57), while the army was given notice that it had until 1944 or 1945 to prepare (Overy, 1989, p. 113). The quantity and sophistication of weapons demanded from the *Luftwaffe*, *Kriegsmarine*, and army over this long period exceeded anything that might be needed for a series of short and limited wars. These demands were thus for building armed forces capable of fighting “the great war for world power” (Overy, 2002, p. 267).

The outbreak of general war over Poland was an unintended event. Hitler had long recognised that Germany’s situation with regard to her endowment of natural resources and manpower would not suffice to deliver her the coveted *Weltmachtstellung*. As such, his goal was to integrate parts of Poland into a larger German Reich, without setting off a general war, so as to consolidate a Greater German heartland. With the construction of the necessary fortifications and industrial appliances, this Greater Germany, consisting of Germany, Austria, Czechoslovakia and parts of Poland, would form the core of a future empire from which war could be waged against the world powers in the future (Carr, 1972, pp. 72-80). This large territorially adjacent swath of European territory was to provide Germany with the beginnings of a *Großraumwirtschaft* (great economic space) which would be fully autarkic and as such perfectly impervious to any attempt at naval blockade. Moreover, such a *Großraumwirtschaft* would allow for designing productive facilities that would utilise the type of economies of scale that the United States, the industrial behemoth at the time, was able to use. Finally, Hitler’s economic and demographic thinking was deeply Malthusian, in the sense that he believed that the agricultural yields from land could only support a certain limited population (Preparata, 2004, pp. 1018-1019). From this observation would follow that if the German population size was to strongly increase over the upcoming decades it would need to settle far more land than was currently available in Germany proper. According to the logic of the racially infused national-socialist idea that the German people (*Volk*) was inherently superior to other peoples and that for *Weltmachtstellung* a far larger population was required, it followed that Germany

needed more land to settle its people. As a consequence of these ideological considerations, the acquisition of more land, literally *Lebensraum*, became a political objective whose completion would strengthen Germany over the course of decades and would allow the *Volk* dominion in world politics. As such, Germany's strategy during the late 1930s was that of steppingstone expansion (Gat, 2001, pp. 11-12). The entanglement in war with France and Great Britain following German aggression against Poland cannot have fundamentally altered Germany's strategic need for well-developed and fully modernized armed forces of all three military branches. To achieve this, there was an imminent need to find some way in which to acquire the materiel needed for the long-term expansion of the armed forces while simultaneously vigorously pursuing the ongoing war effort.

Siphoning savings

The development and production of such materiel could not be directly undertaken on a large enough scale in the relatively backward German industrial economy. Continued major investments would thus be necessary to build a modernized industrial complex capable of churning out the weapons Hitler needed to achieve a final victory in the West. Since private households were already more heavily taxed so as to contribute to the direct war effort, another appeal to Germany's business might be in order. However, instead of taxing any and all excess profits that were made, and as such effectively nationalizing these businesses, policymakers might allow profits to accrue, only for them to be spend on further war investments by the businesses themselves.

In a sense, such a system would exactly mirror the system that was imposed on German consumers. After the outbreak of war, German policymakers sought to strictly curtail the domestic consumers' purchasing power so as to ensure that this was not spend on the production of redundant goods of no military value. A war tax was introduced so as to reduce the means that households had available for consumption while directly delivering these means to the German state (Overy, 2002, p. 270). Additionally, rationing was enforced both on both the demand and the supply side. The latter was done since it was believed that consumers would seek to exchange their surplus income for luxury non-rationed goods, after having bought their allotted share of rationed goods. By outright prohibiting the manufacturing of these goods, this channel of private consumption was effectively shut down entirely after existing stocks were sold (Buchheim & Scherner, 2006, p. 395). The German consumer was to live on an *Existenzminimum* but, crucially, this goal was to be met through rationing instead of subjection to extreme levels of increased taxation (Schwerin von Krosigk, 1974, pp. 298-299). The German consumer would be encouraged to save through both propaganda and due to the simple reality that there was nothing to actually spend excess income on. As expected, savings skyrocketed after some initial withdrawals prior to and immediately after the outbreak of war. Financial institutions were obliged to channel the consumer deposits into buying Germany's treasury bills and long-term loans and thus

ensured that the increased savings in the national economy were directly at the discretion of the German regime.

This complex scheme had a number of benefits. Firstly, German consumers retained the hope that after the war their increased savings would allow them to achieve a far higher standard of living compared to the standard of living either before or during the war. Meanwhile, German policymakers were able to access large amounts of capital necessary for investments without having to worry about offering public loans, which during the First World War had led to increases in inflation and reductions in saver's confidence (Holtfrerich, 1986, pp. 116-119; Schwerin von Krosigk, 1974, p. 297). This system depended on strict control of prices within the economy, so as to ensure that the German consumers could rely on the purchasing power of their savings after the war (White, 2012, 158). What was obscured from them however was that the regime depleted these savings accounts so as to pay for the continuation of the war. Thus, instead of outrightly taxing the German consumers, the regime found a more deceitful and indirect technique to accrue the necessary revenues for war spending.

What worked for curtailing the purchasing power of consumers might also work for ensuring that any and all profits made from the production of materiel by industrialists would again be channelled into investments in future German production capacity, wherever it was deemed useful by military and economic planners. German policymakers had consciously chosen not to nationalize firms in order to achieve this goal; private property was generally respected within the German economy (Buchheim & Scherner, 2006; Temin, 1989, p. 117). This was due to a belief in the merits of retaining private ownership over nationalized firms. Allowing corporate profiteering was believed to greatly incentivize producers (Spoerer, 1996a, p. 21). Hitler himself for instance opined that "I [Hitler] absolutely insist on protecting private property. I regard it as axiomatic that ... [a] factory will be better run by one of the members of a family estate than it would be by a state functionary" (Hitler, 1953, p. 294). Moreover, already in 1930, he had, in conversations with Gregor Strasser, expressed his belief that a large firms like Krupp should be left alone to protect private initiative (Preparata, 2004, pp. 1019-1020; Strasser, 1930, p. 128). In doing so, he outrightly rejected the option of nationalizing private industries which during that time associated with a socialist regime (Strasser, 1930, p. 128).

The profit motive thus enjoyed protection within Hitlerite Germany. However, the necessities of war did dictate that any profits derived from industrial production would need to be channelled into furthering the capacity to sustain the war effort. This was sometimes done through outrightly forcing German firms to undertake investments into specific projects. An interesting example is the forced investment by lignite producers in the establishment of the *Braunkohle Benzine AG (BRABAG)*, which would work on distilling fuels from lignite (Birkenfeld, 1964, pp. 37-38; Hayes, 2001, pp. 133-135). The role of forced investments and threats of nationalization should however not be overstated. Generally, German firms were relatively free to refuse any orders, even those made by the state and even after the outbreak of war (see Buchheim & Scherner, 2006, pp. 401-402 for a number of telling

examples). This policy once again is in line with Hitler's belief that the government should not forcefully interfere in the conduct of private businesses.

Since German policymakers only seldom resorted to force to ensure the necessary investments in the military-industrial complex, they generally had to induce firms to make these investments. An important factor in this was necessarily that profits could neither be consumed nor invested in scarcely anything other than the war effort. Additionally, the state offered leasing arrangements and guarantees to producing firms, in order to induce them to invest in projects that were either unprofitable in the short run or would be rendered largely redundant when the hostilities would end (Buchheim & Scherner, 2006, pp. 404-405). The state thus provided incentives in order to steer investments as it liked and counted on the motives of private businesses to react on these incentives (Tooze, 2003, p. 98). Continuing the accrument of profits and steering these through careful incentivizing might allow Germany to build the industrial complex it needed for pursuing the decisive future 'war of the continents', while also allowing for as much production of material in the present. Only when the greater strategic situation would deteriorate so dramatically as to directly threaten Germany's territorial integrity itself should we expect her to avail herself of the methods more commonly associated with the planned economy, such as the curtailment of profits and further coercive interventions in the national economy. This is due to the fact that any such deteriorations would, until successfully overcome through a series of military victories, would render long-term investments increasingly redundant. In such a situation only the maximization of short-term output would be of importance, and curtailed profits and more coercive methods could more readily obtain greater production rates of such output.

In order to provide support for this argument, I will provide a more detailed substantiation for the following set of claims. Firstly, I will show through a number of case studies that Germany's economic policy was adjusted according to changes in her strategic situation. For instance, as fighting short-term conflicts became more important there would be a greater focus on maximising direct output. On the contrary, as short-term conflict receded into the background due to military victories, there would be more focus on constructing long-term productive facilities. Secondly, I will substantiate that German businesses might be allowed more latitude to realize profits when the strategic situation resembled the latter situation, since these profits might subsequently be invested again in constructing long-term productive facilities. Before moving on to this type of analysis however, it is important to carefully delineate the different types of changes in the strategic situation and to select cases that are representative of such typologies.

Methodology

In order to assess whether there is empirical support for the aforementioned claims, I make use of a historical case study. I structure this case study along the lines of the one performed by Pape (1996), who explored inter alia the Japanese decision to surrender and the failure to force Germany to surrender

through the use of coercive air power strategies (Pape, 1996, pp. 87-137, 254-314). In both case studies, Pape analyses the willingness to surrender on the part of civilian and military decision-makers. According to his theory of coercive air power, states will be moved to surrender when their military vulnerability changes, while they will be largely unperturbed by any changes in civilian vulnerability. Thus, by considering important events in which either military or civilian vulnerabilities change, Pape can convincingly map whether changes in willingness to surrender were caused by changes in military or civilian vulnerability¹¹.

Basing the methodology of this research on the case study performed by Pape offers a number of advantages. Both in Pape's work and the research in this paper, exogenous changes in the military situation are the main variables of interest. Moreover, Pape's approach specifically tracks policy decisions, which are also of interest in this study. For, Pape the exogenous changes that bring about changes in policymaking are composed of changes in the military situation that either result in greater military or civilian vulnerabilities. In this paper, the exogenous changes of interest reflect either a strategic divergence or convergence. I classify three different varieties within strategic divergence and identify one type of convergence. The four different types will be substantiated in greater detail below, although one type of strategic divergence only has theoretical relevance and will as such not be researched in a case study.

Firstly, strategic divergence can be caused by the need to focus more on the immediate short-term wars to be fought mainly on the European continent and by the army or on the long-term preparation for intercontinental warfare, through investments in productive capabilities. Moreover, it might be possible that military success suddenly allow for a greater focus on long-term investments. The first situation is the most straight-forward, since a relatively large number of situations, either intentional or forced upon German policymakers, must have arisen that necessitated focussing on supplying the short-term material needs required by the *Wehrmacht* for pursuing the immediate waging of war. Such situations could come about through the outbreak of war, which necessarily limits the possibility of nurturing long-term goals in a peacetime economy in favour of direct war production. Moreover, it is possible that military defeats render direct war production more essential vis à vis long-term investments. I label this type of divergence, where the economy shifts from investing in long-term productive capabilities to maximizing short-term outputs, as divergence I.

The second case of a divergence in the strategic situation, in which the economy oriented towards short-term production is forced to focus more on long-term production, seems to be merely a hypothetical possibility. It does not make that much sense to consider a case in which there is suddenly greater focus on the long-term preparations for war given that Hitler had already set his sights on *Weltmachtstellung* and had ordered the construction of the necessary military apparatus to be completed

¹¹ See Pape (1996, p. 126, 291) for two tables in which Pape's argument can be easily reviewed at a glance.

during the mid-1940s. The German economy was thus already consciously oriented towards the long-term preparation for war from the very start of hostilities in 1939. The only situation that might have arguably unexpectedly emphasized the need to wage a long-term war is the entry of the United States into the conflict in December 1941. It would however not be productive to consider this case due to two reasons. Firstly, as will be shown in greater detail below, Hitlerite Germany had long harboured designs to commence hostilities with the United States, and had even offered Japan the possibility of a joint declaration of war in the spring of 1941. As such, the fact that war with the United States occurred in 1941 was not a total surprise for the German high command. Secondly, the German declaration of war on the 11th of December 1941 coincided with a military emergency during the battle of Moscow, which I label a case of Divergence I. German policymakers were arguably strongly focused on the Battle of Moscow and its consequences in the winter of 1941/1942 and would have devoted lesser attention to the situation with the United States during this period. As such, this type of divergence, which I label divergence II does not seem to have been present for Germany during the Second World War.

The third case of divergence occurs when an economy that is oriented towards short-term production can be readjusted more freely towards long-term production due to military victories that do away with the stringent need to maximize short-term armament outputs. Such military or geopolitical successes would for a greater degree of latitude in planning for the war against the Anglo-Saxon allies, due to a less pressing need to supply the army with the more mundane requisites of war. I label this type of case convergence III.

Finally, the case of deteriorating convergence would occur when the tendency to have the economy focussed on producing on immediate armaments output is further strengthened by additional military or geopolitical setbacks that result in an even more direct need to focus on devoting greater attention to the actions fought army. There is thus convergence since, in contrast to the three divergence typologies, the tendencies that are already present in the economy are strengthened further instead of reversed. Deteriorating convergence would as such only be possible when the war economy has earlier already been adjusted to focussing more on immediate output of armaments. An overview of the different theoretical situations is presented in Table 1.

The different changes in the strategic situation would likely warrant distinct adjustments in policies by German policymakers. Divergence I is the situation in which there ensues a need to fight a direct short war by the *Wehrmacht* while the economy is being prepared for warfare on the long-term. It would thus be expected that short term armament outputs would suddenly enjoy greater priority at the expense of the construction of long-term productive capabilities. A maximization of short-term output could be accomplished by more forceable and coercive measures which would likely reduce the latitude that German businesses would enjoy in generating profits. Case studies that cover divergence I should ideally include a sudden and relatively unexpected need to fight a short-term war or to devote greater focus to hostilities being fought by the army. I believe that two suitable cases can be identified that

correspond to the situation of Divergence I. The first such case is the invasion of Poland in 1939. While Hitler purposefully sought and found a confrontation with Poland in 1939, I will argue that he neither wanted nor expected the outbreak of a general European war involving Great Britain and France. All branches of the German armed forces were led to believe that a general war would not break out before at least four more years and were as such only aiming at having completed rearmament programs only at a later stage (for the Luftwaffe see Overy, 1975, pp. 779-783, for the navy see Dülffer, 1973, p. 498; Hauner, 1987, p. 27; Homze, 1976, pp. 242-250; Ruge, 1957, p. 27; Salewski, 1970, p. 57, for the army see Overy, 1989, p. 113). Confronted with the sudden need to fight a general war that Germany was still largely unprepared for, the focus of the war economy must have shifted to short-term armament output. As such, the invasion of Poland would seem to present an excellent possibility for studying divergence I. A second case that displays characteristics of Divergence I is the defeat that the *Ostheer* suffered at the hands of the Red Army during the battle of Moscow in the winter of 1941/1942. Following the initial successes of operation Barbarossa, Germany had initiated a reprioritisation of the war economy towards the *Luftwaffe* and the navy in the belief that the continental war would shortly be over. When it became clear that this would not be the case and that large quantities of equipment were lost, there existed again a situation in which the war economy had to be reoriented towards short-term armament output while it was configured for producing the requisites for a longer war of attrition against the Anglo-Saxon Allies.

Divergence III would allow for a greater focus on the long-term productive capabilities for warfare while the war economy was still producing as much output as possible for achieving short-term victories, due to having achieved military or geopolitical successes that rendered fighting wars by the army closer to the German homeland less important. An interesting case in point is the period between the invasion and the subsequent fall of France in 1940, and the invasion of the Soviet-Union in the summer of 1941. The extraordinarily rapid military defeat and capitulation of France and the Low Countries combined with the routing of the British Expeditionary Force was highly surprising and must to a certain extent also have been unexpected for the Germans themselves. Finding itself in control of large parts of Europe yet unable to capitulate Great Britain, Hitlerite Germany oriented itself towards invading the Soviet-Union. Defeating that country would extinguish any British hopes for intervention and would provide the raw materials to construct an autarkic *Großraumwirtschaft* (economic great space) that would provide Germany with the material base for a war of continents. It would thus be expected that shortly after the start of operation Barbarossa, before the deterioration of the military situation on the Eastern front, a full reprioritisation from producing the requisites of war in the short term towards production for waging war in the more distant future would occur. This might be facilitated by letting profits accrue and subsequently using corporate savings for the silent financing of productive capabilities.

Finally, deteriorating convergence would necessitate the utmost focus on directly supplying materiel to the army and foregoing investments in long-term productive capabilities. Deteriorating

strategic convergence would have been brought about by military or political setbacks that increasingly threatened the territorial integrity of Germany's enlarged territories or even of its homeland. In the latter half of the war, there are numerous historical cases which fit this description, due to the near continuous series of setbacks that Germany suffered that eventually resulted in capitulation. However, care should be taken not to select cases that are too close in time to the eventual capitulation of Germany, since at some point in time effective planning of the war economy must have indefinitely broken down under the strains of war. It is not possible to put an exact date at the eventual disintegration of conscious economic planning. "Doom did not descend on the Third Reich with a single blow. It struck at regular intervals and shifted from one theatre to another" (Tooze, 2006, p. 625). However, especially towards the end of 1944 and the beginning of 1945, the mounting damages caused by strategic bombing coupled increasing military threat posed to the territorial heartland of Germany must have resulted at some point in the disintegration of any fully conscious economic war planning. As such, it would make more sense to consider earlier cases. Moreover, it would be highly interesting to identify a case that is the very first of the series of defeats that Germany suffered during the latter half of the war. Any cases that are selected after this moment might only reaffirm the need to focus on increasing the direct output of materiel but would not lead to a drastic shift in focus from long-term investments towards direct output. Only the early defeat would necessitate such a shift.

One interesting possibility for this case is the Battle of Stalingrad in the winter of 1942/1943 during which the Germans lost a large number of armed forces and enormous stocks of equipment in the encirclement of the city. The situation also led to a retreat from the resource rich Caucasus region and arguably signalled the true shifting of the initiative both on the Eastern front and of the entirety of the war as such. A long series of defeats followed after the winter of 1942/1943, that are interesting to consider but in essence would only lead to intensification of policy decisions that would already have been taken following the shift in initiative that occurred after the defeat at Stalingrad. The battle of Stalingrad represents a situation in which the German war economy would, which had already been geared towards armament production for replacing the losses to the *Ostheer* of the previous year and subsequently enabling it to embark on offensive operations, would further converge on that type of production.

An overview of the different types of strategic situations, and the corresponding case studies is shown in Table 1.

| Change in strategic situation | Likely policy measures | Corresponding effect on corporate profiteering | Case study |
|---|--|---|---|
| Divergence I, caused by the need to wage short-term warfare. | Prioritising maximization of current armament output at the expense of building up the long-term military-industrial complex. | Reduced latitude for corporate profiteering | Invasion of Poland, 1 st of September 1939 Battle of Moscow, 5 th of December 1941 |
| Divergence II, caused by the need to wage long-term warfare. | Prioritising of building up the long-term military-industrial complex at the expense of maximization of current armament outputs. | Increased latitude for corporate profiteering | - |
| Divergence II, caused by the increased latitude to wage long-term warfare | Prioritising of building up the long-term military-industrial complex at the expense of maximization of current armament outputs. | Increased latitude for corporate profiteering | Fall of France until operation Barbarossa, 10 th of May 1940 until 22 nd of June 1941 |
| Deteriorating convergence | Strongly prioritising maximization of current armament output at the expense of building up the long-term military-industrial complex. | Greatly reduced latitude for corporate profiteering | Battle of Stalingrad, 19 th of November 1942 until 2 nd of February 1943 |

Table 1: Overview of strategic situations and case studies

In essence, these four case studies continuously cover the first three years of the Second World War. This approach offers a number of advantages. Firstly, cases have been chosen during a period in which many changes in the strategic situation occurred. During the period of September 1939 until February 1943 German policymakers would constantly be confronted with different strategic situations upon which to base their decisions as to how to orient the war economy. This differs with the situations that would confront them from 1943 until the end of the war during which the long strings of defeats incurred by the Germans would constantly be more of the same; the strategic situation constantly displayed deteriorating convergence, only to ever more serious extents. Secondly, the period under study covers the start of the war and will allow us to assess whether the economical exertions to sustain the war effort went to the utmost from the beginning or was severely constricted in favour of other actors. There is generally no doubt that a fully mobilised war economy existed during the latter part of the war. Most the academic debate focuses on whether such a war economy existed the first years of the conflict. Thirdly, selecting the case studies so as to construct one continuous period under study will likely result in a more logically coherent narrative that allows for falling back on earlier introduced facts in some of the other case studies. Finally, the period under study roughly coincides with the period during which

Germany held the initiative in military operations. The latter half of 1942 has been described by Winston Churchill as the hinge of fate during which the Allies moved from being on the defensive in all theatres of war to being able to finally dictate the pace of operations which would last until the end of the war (Churchill, 1951, p. IX).

All four case studies detailed discussed follow the same type of structure. Firstly, there is a relatively detailed account of the specific case with regard to the changes in the military and political situation that German faced. These accounts are quite long for two distinct reasons. For the first and second cases, dealing with the outbreak of war, and the fall of France and invasion of the Soviet-Union respectively, it is important to show that both events were wholly unexpected, and that economic policy thus had to suddenly adjust to the new political realities. I aim to show that German policymakers never seriously believed that war would break out over the invasion of Poland and could not have anticipated their stunning victory over France. With regard to the third and the fourth cases, on the battle of Moscow and Stalingrad respectively, there is a relative abundance of military details to document that the fighting on the Eastern front was, quite unexpectedly from the perspective of the Germans, so intense that far more armaments had to be produced to fight the Soviet-Union than was previously anticipated. Secondly, I document the changes in economic policies that occurred based on these changes in the strategic situation and the attendant decision-making processes. Finally, wherever possible I attempt to detail whether the latitude for corporate profiteering was either curtailed or expanded.

Case studies

Invasion of Poland, September 1939

Germany invaded Poland on the 1st of September 1939, after a conflict about the status of Danzig as a free city and the final status of the Polish corridor. In retrospect, it seems clear that the invasion brought about the intervention of the Allies, and thus sparked the Second World War. However, in the weeks before the invasion Hitler both hoped and expected to either receive his demands to Poland or to fight only a localised war. While Great-Britain and France had earlier guaranteed the territorial sovereignty of Poland (Hansard, 1939), there were indications that the two great powers would not go to war in a contingency. For instance, a Polish request to its newfound allies for 60 million pounds in credits to buy weapons and materials was turned down; only 8 million pounds were eventually allocated (Robertson, 1989, p. 338). Additionally, the Molotov-Ribbentrop pact, signed on the 24th of August, put a definite end to the hopes that the Soviet-Union would help in upholding the peace in Europe through collective security (Overy, 2009, pp 20-22). The agreement of this pact had a dual impact on Great Britain and France. Both nations had made their own overtures to the Soviet-Union, roughly simultaneously with the Germans. The British hoped that a pact with the Soviet-Union would prevent that country from siding with Germany, would dissuade Germany from attacking Poland when confronted with a three-power British-French-Russian front, and would, if deterrence failed, provide a

genuine hope for the successful defence of Poland by the Red army (Weinberg, 1980, pp. 613-617). The fact that Germany had secured an agreement with the Soviet-Union was as such deemed a *coup de grâce* for the interventionist movement in Great-Britain and France. During a speech on the Obersalzberg on the 22nd of August 1939, Hitler once again cited the tendency to favour appeasement by Great Britain and France, when he made remarks in relation to the forthcoming signing of the German-Soviet pact: “Our enemies are little worms. I have seen them in Munich” (Michaelis & Schraepfer, 1958, p. 481).

As such, the allied declarations of war on the 3rd of September came as a surprise to German policymakers. Hitler was reportedly dumbstruck when he had received the news (Dietrich, 1955, p. 47; Schmidt, 1951, p. 158). However, already in the evening of that day, he had returned to his original position and believed that although Great-Britain, and by now also France, had declared war, they had no real intention to fight. Instead, he stated that they would merely opt for a *Kartoffelkrieg*¹². In a sense, he was proven right by the decision of the Allies not to launch overly aggressive offensives and instead let the period between the invasion of Poland, and the eventual invasion of France and the Low Countries develop in what would become known as the Phoney war or *Sitzkrieg*. The British refused to launch a bombing campaign against Germany and instead dropped only a large number of propaganda leaflets (Bouverie, 2019, p. 380). Meanwhile the French merely launched a small offensive into the Saar on the 8th of September before retreating back to the defences of the Maginot line in mid-October following a German counterattack (Michel, 1975, pp. 1-36).

However, even though there were no real offensive actions by the Allies, the outbreak of a general war in September 1939 must have terribly shaken the German planners. All branches of the armed forces had counted on a longer period during which armaments could be build up (Dülffer, 1973, p. 498; Hauner, 1987, p. 27; Homze, 1976, pp. 242-250; Overy, 1975, pp. 779-783; Overy, 1989, p. 113; Ruge, 1957, p. 27; Salewski, 1970, p. 57). Important aspects of the four-year plan were still in development or had not even started (Overy, 1989, pp. 114-116). The sudden outbreak of war would change these plans and lead to quick shifts in the German armaments policies. As such, the outbreak of war makes for an excellent case of Divergence I, since the economy suddenly had to be readjusted to focus on the immediate needs of the army in fighting the war.

Firstly, Hitler shelved *Plan Z*, the ambitious programme to establish an enormous oceangoing fleet, almost as soon as a general war broke out (Tooze, 2006, p. 338). Secondly, the invasion of Poland laid bare the precarious state of the *Wehrmacht* in late 1939. An ammunition crisis would soon break out (Thomas, 1966, pp. 170-178); consumption of shells by the *Luftwaffe* outpaced production in September sevenfold (Hahn, 1987, pp. 198-199). Especially alarming were the high rates of vehicular breakdowns in the armoured formations. After only a month of fighting against Poland, a secondary power in the European state system, a quarter of the armoured divisions’ tanks had broken down (Hahn,

¹² Literally potato war, which was meant to indicate a (naval) economic blockade.

1987, pp. 194-196). Moreover, motor companies suffered losses up to half of their initial number of vehicles (Creveld, 2003, p. 146). Only the swift conclusion of the Polish campaign prevented a collapse of the logistics system (Rohde, 1971, p. 212; Steiger, 1973, p. 146). A reprioritisation of the war economy was ordered to focus on the production of infantry and artillery munitions, that would be necessary for the army's invasion of France, and aircraft, that would be necessary to bomb Great Britain into submission.

Hitler demanded that the exertions in pursuing the war would amount to the utmost and counselled his generals that none should count on the war being over quickly. As recently as the 23rd of May 1939, he had held a conference with a number of senior military leaders during which he had warned them of the dangers of presupposing a short war. Instead, he recognised that there were only few events that would bring about the instantaneous capitulation of a modern nation-state, and that as such “the government must also be prepared for a war of 10-15 years duration” (Office of United States Chief of Counsel for the Prosecution of Axis Criminality¹³, 1946, p. 851). This type of reasoning may be heavily influenced by the Clausewitzian dictum that “some people might of course think that there was some ingenious way to disarm or defeat an enemy without too much bloodshed” but that this in fact is “a fallacy that must be exposed” (Clausewitz, 1832/2007, pp. 13-14). As such, he warned his generals to prepare for a lengthy war of attrition.

Nevertheless, Hitler also recognized that Germany was not well predisposed to fight such a war of attrition. Even though the four-year plan had a strong focus on providing the state with the necessary synthetic substitutes for raw materials, this endeavor was nowhere near sufficient in 1939. Economic blockade immediately set in and slashed the amount of industrial imports which fell by nearly 80% between September 1939 and January 1940 (Tooze, 2006, p. 333). In the aforementioned conference in which Hitler had set out his belief that modern wars would always be lengthy in character, he had made one caveat. A quick victory might still be possible since “every state will hold out as long as possible, unless it immediately suffers some grave weakening” (Chief of Counsel, 1946, p. 851). For Germany, such a grave and mortal weakening would constitute the loss of the Ruhr Basin, and the associated industrial capabilities. For Great-Britain, Hitler believed that the destruction of her surface fleet would immediately force her to surrender. As such, there seems to have been a duality in Hitler's thought. On the one hand, he believed that the future great power wars would be extremely lengthy affairs, while on the other hand he did believe that a rapid knockout blow had the potential to win the war in one fell swoop. In the end, given these considerations, he chose to take an extremely high risk in pursuing the knockout blow. This would have been in line with his general risk orientation, since as he had remarked to Göring shortly before the Polish attack: “In my life I have always gone for broke” (*Ich habe in meinem*

¹³ Hereafter Chief of Counsel.

Leben immer va banque gespielt) (Weizsäcker, 1996, as cited in Fest, 1975, p. 609; Kershaw, 2000, p. 230).

Immediately after the outbreak of war, no-one believed that, given the precarious situation with regard to industrial imports, Germany could hold out as long as it had done during the First World War. As such German policymakers were starting to draw up tentative plans for fighting a war that would last at maximum three years. Through careful economization of food and raw materials existing stocks, augmented by what little could still be imported, would likely prove sufficient for this period. However, such a strategy of endurance was predicated on the condition that no major offensive operations would be undertaken after the subjugation of Poland. A defensive posture would be the only possibility for Germany, since any offensive operations would prove to be too strongly a strain on Germany's resources. Unsurprisingly, Hitler did not agree with this stance and argued that instead all economic preparations ought to be taken for the invasion of France and the Low Countries, regardless of any damages which such a decision might do the civilian economy or to Germany's prospects for war in the longer-term (Tooze, 2006, pp. 336-338).

Reflecting the greater drive towards armaments that was created through the outbreak of war and the enactment of the war economy German expenditures on military matters doubled in the fiscal years from 1938/1939 to 1939/1940, while expenditures on civil affairs slightly decreased (Boelcke, 1977, p. 55; Klein, 1959, p. 256). In the fiscal year of 1939/1940 the government spent an additional 18.6 billion Reichsmark (RM) for a total expenditure of 58 billion RM (45% of German Gross Domestic Product) (Boelcke, 1977, p. 55; Klein, 1959, p. 256; Overy, 1988b, p. 389). These increases in expenditures were to be financed through a number of different channels. On the 4th of September, the *Kriegswirtschaftsverordnung* (Reichsministerium der Innern, 1939, p. 1603) was published. This law would be the first of many documents, speeches and publications that would extol the German people to give their utmost to pursue the war effort. Specifically, the law included a steep increase in income taxation and additional value added taxes on products such as beer and tobacco. Moreover, several passages were inserted which exhorted businesses to decrease prices wherever and whenever possible, thus in a sense stimulating them to voluntarily curtail their profits. The appeal to businesses did however not remain fully voluntary since corporation taxes were also increased. In 1939 and 1940 businesses paid 12,227 and 14,790 million RM respectively, compared to only 8186 million RM in 1938. The increased revenues from taxation could however only pay for a relatively small amount of the expenditures of the German state (Lindholm, 1947, pp. 123-127; Oertel, 2015, p. 703-704; Overy, 1988b, pp. 389-391)¹⁴.

The remainder of the costs were financed through the use of loans and forced contributions from conquered territories. In the first year of war (01-09-1939 until 31-08-1940), the German state would

¹⁴ The total expenditures in 1939/1940 amounted to 58 billion RM (Boelcke, 1977, p. 55; Klein, 1959, p. 256; Overy, 1988b, p. 389) while total tax revenues only amounted to 23.57 billion RM (Overy, 1988b, p. 391).

take 62.54 billion RM in credits while only repaying 31.95 billion RM (Boelcke, 1985, p. 99; Oertel, 2015, p. 704). Ready access to liquidity was provided by the complicated scheme in which banks were forced to exchange private savings for government bonds, and short- and long-term loans in non-public offerings. As such, private savers were, unbeknownst to them, indirectly further financing the German war effort (Overy, 1988b, pp. 391-394). All in all, economic policies shifted to prioritising immediate production upon the outbreak of war in September 1939 and the means to finance such expenditures would be partially found through increasing coercive measures against businesses, including a higher tax on corporate profits.

Fall of France & invasion of the Soviet-Union, May 1940 – November 1941

The risky attempt at a knockout blow against France was belatedly launched on the 10th of May 1940. Already on the 27th of September 1939, Hitler had pressed for an earlier assault against France and the Low Countries (Mearsheimer, 1983, p. 101) but a large number of senior generals were sceptical about this endeavour. The main gist of their critique was that the tactics used during the relatively smooth defeat of Poland, partially brought about through sheer overwhelming numerical and material advantage, could not be replicated against an enemy that possessed stronger forces. The Allies¹⁵ strongly outnumbered the German army in manpower (Frieser, 2005, p. 56), artillery (Haupt, 1965, p. 357; Umbreit, 1979, p. 282) and tanks (Frieser, 2005, pp. 56-58). Reflecting these material considerations, the original plans formulated in directive 6 on the 9th of October 1939 foresaw only a limited strike against the Channel ports (Hubatsch, 1962, pp. 32-33) without the subsequent wheel towards Paris which had characterised the Schlieffen plan of 1914 (Jackson, 2004, p. 30; Jacobsen, 1956, pp. 41-45; Mearsheimer, 1983, p. 104). The aim of such an attack was hence limited; serving only to capture the Channel ports and a number of aerodromes from which Great Britain could be attacked (Jackson, 2004, p. 30). Moreover, the conquered territory in the low countries would serve as a buffer to protect the vital industrial area of the Ruhr (Hubatsch, 1962, p. 32). Eventually however, this plan was drastically readjusted based on the ideas of Heinz Guderian and Erich von Manstein, who were supported by Gerdt von Rundstedt, to shift the weight of the attack from army group B, which would strike the Netherlands and the North of Belgium, to army group A, which would attack through the Ardennes (Jackson, 2004, pp. 30-31; Mearsheimer, 1983, pp. 112-129). As such, instead of providing the main thrust of the attack army group B would engage in a large-scale feint intended to draw allied armies to occupy positions in the North of Belgium. Consequently, army group A, which now contained the bulk of the armoured divisions would strike through the Ardennes towards the Channel coast. If these formations were able to break through to the coast, a large contingent of the allied forces would be enveloped and as such effectively cut off from their supply lines. The juxtaposition between the 1914 Schlieffen plan, the plans

¹⁵ Here including the Dutch and Belgian armies.

for the limited strike formulated in 1939, and the readjusted version of the plan championed by Manstein are shown in *Figure 1*.

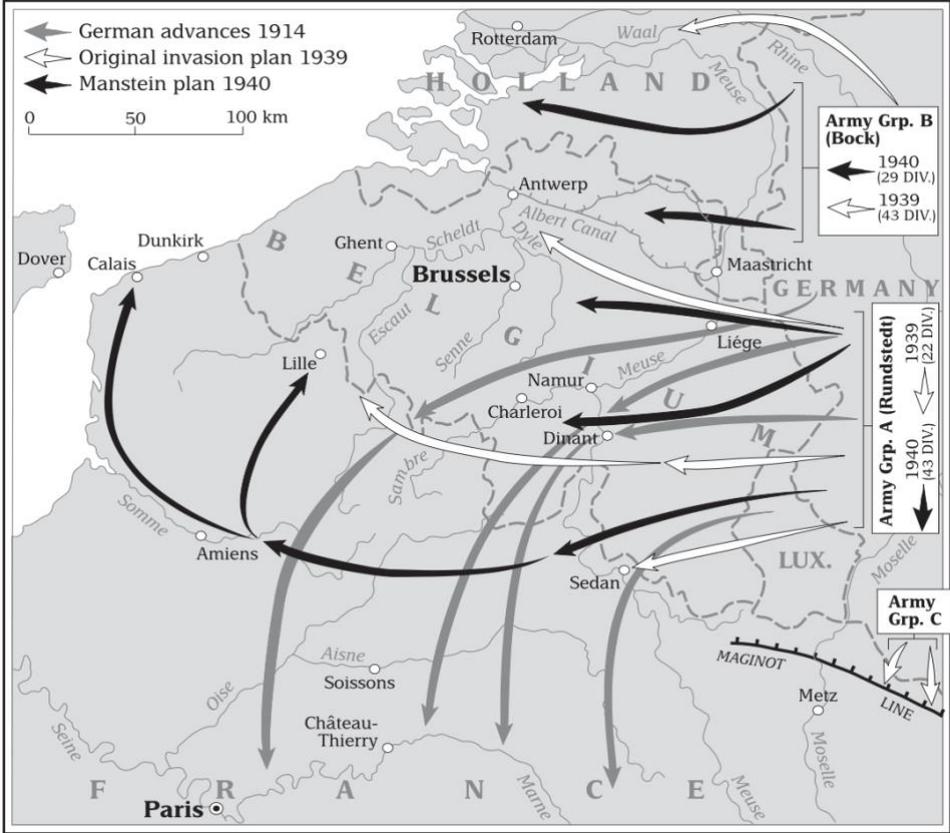


Figure 1: the Schlieffen plan, 1939 limited strike plan & 1940 Manstein plan (Jackson, 2004, p. 31). Reprinted with permission.

In the event, the audacious plan worked to perfection. The allied forces incorrectly supposed that the attacks on the Netherlands and the North of Belgium were the prelude to a repetition of the 1914 Schlieffen plan. As such, they moved the bulk of the French army and the British Expeditionary Force (BEF) into upward into Belgium in order to establish advanced defensive positions. The German feint by army group B, which consisted of 29 divisions of which only three were armoured, thus drew in no less than 57 Allied divisions which constituted the flower of the Allied forces (Jackson, 2004, p. 33; Tooze, 2006, p. 376). Moreover, the Germans merely placed 19 second-rate divisions along the Rhine valley opposite which the French had positioned 36 divisions in the Maginot Line (Jackson, 2004, p. 33). Leaving the Northern and Southern-most flanks seriously outnumbered allowed for the concentration of overwhelming numbers in the centre, where army group A, which included no less than seven armoured divisions, pushed through the Ardennes in order to reach the Channel Coast. The speed of the German advance was astonishing, and already by the evening of 13th of May German troops had managed to secure three bridgeheads across the Meuse (Jackson, 2004, pp. 42-47). Largely unhindered by substantial counterattacks, German troops reached the mouth of the Somme on the 20th of May, just ten days after the offensive had commenced, and thereby split the Allied armies into two (Reynolds, 1990, p. 325). The manoeuvre resulted in the largest encirclement in all of military history and

Germany's greatest victory in the Second World War. Approximately 1.7 million men were encircled and eventually, after the large-scale evacuation at Dunkirk and the escape of 100,000 French soldiers to the south, 1.2 million men were taken prisoner. Additionally, enormous amounts of materiel were captured from the Allied forces who were forced to either surrender it or leave it behind on evacuation. The detailed description above serves to illustrate that the success over France was the product of a highly risky and quite reckless military strategy that would either result in victory or a defeat that would immediately end the war (Murray, 1984, p. 361).

The military defeat of France proved to be the catalyst for a wholesale political reorientation in Europe. Within six weeks France had been eliminated and the BEF had been routed. The British were anxiously preparing to deal with the imminent invasion of their home island and could not pressure Germany anywhere else. Italy had joined hostilities against France on the 10th of June, even though she had firmly rejected a request for co-belligerency before the invasion of Poland in the previous year. Romania, a country that had been pressured by Great Britain and France not to supply Germany with oil (Medlicott, 1952, pp. 250-259), reoriented itself towards Germany after the victory in France. The two countries agreed a deal in which Romania would be supplied with weaponry (much of it taken from the Polish army) in exchange for oil supplies vital to the German war economy (Tooze, 2006, p. 380). Sweden accorded Germany a number of rights, such as passage for troops and shipbuilding for the German navy, that she had accorded to neither Great Britain and France nor Finland in the previous years (Weinberg, 1994, pp. 174-175). Other countries shifted their stances less drastically, but Spain, Portugal and even Switzerland did reorient some of their policies away from Great Britain and towards Germany in the summer of 1940.

As such, Germany stood virtually unopposed on the Western-European mainland. There were no active fronts from which sudden and direct assaults by enemy armies could be launched against either the German homeland or its occupied territories. Great Britain would for some time not be in a position to even contemplate an amphibious assault anywhere in Europe. For a short moment it even seemed as though the war might be coming to a close. On the 25th of May, Churchill, recently become prime minister, had given permission to his foreign secretary, Lord Halifax, to contact the Italians in order to explore whether they might mediate between Great Britain and Germany (Bouverie, 2019, p. 407). Churchill stated that he would be acceptive of, for instance, yielding Malta and Gibraltar to Italy and some colonies to Germany, but immediately reaffirmed that Germany would never offer terms that any reasonable British government might accept. The next day however, Churchill categorically opposed contacting the Italian ambassador and eventually derided peace talks as being dangerous to the morale of any remaining fighting elements in France, the British Dominions and Great Britain as a whole (Bouverie, 2019, pp. 408-409). In a meeting with the larger cabinet on the 28th of May, the entirety of the cabinet favoured continued resistance and Lord Halifax acceded. On the 4th of June, Churchill would state to the members of parliament that “[w]e [Great Britain] will never surrender” (Hansard, 1940).

A long war of attrition seemed increasingly likely, and even though Great Britain was the only belligerent in the war, she could increasingly count on the industrial production of the United States. Meanwhile, the economic resources at the command of Germany, notwithstanding the fact that she had secured large tracts of land in Europe with which to realize a *Großraumwirtschaft*, were not sufficient to attain autarky. There were shortages of oil (Tooze, 2006, pp. 411-412), coal (Lewis, 1941, p. 116) and food (Brandt, 1954, pp. 518-519). Moreover, steel production, which was highly necessary for warfare, was severely impaired by the lack of sufficient coking coal. The war would continue, and Germany saw itself forced to find some fashion in which it could defeat Great Britain or move that country to surrender. Its main instrument for doing so however, the army, was useless in the face of overwhelming British naval superiority, which made a cross-channel invasion impossible. To counteract the naval inferiority, Hitler ordered the resumption of constructing a number of large battleships¹⁶ (Weinberg, 1994, pp. 175-176). Plans were being made for the construction of a large blue water navy with which Germany could project power far abroad. Additionally, work continued on the construction of a four-engine strategic bomber that would be able, in the most optimistic scenarios presented to German policymakers, to strike the United States (Overy, 1978). These developments were however not far fledged, and no quick decision could be gained by further prioritizing either. Instead, a solution was sought through which Germany could apply her land forces in obtaining a definitive decision in the conflict.

One fashion in which the army could be brought to bear was through attacking the Soviet-Union. At a glance, the decision does not make sense since it would needlessly broaden the conflict to encompass a country that had so far been nominally allied to Germany¹⁷. From a certain perspective, the move might however have had some rationale. The Soviet-Union was the only great power that was within striking distance of Germany's land forces. More importantly, she alone possessed the industrial resources that would allow for the construction of a truly autarkic *Großraumwirtschaft* with which to vie with that of the United States (Tooze, 2006, p. 420). As such, Göring impressed on general Thomas, that the oil fields of the Caucasus were essential for a continued waging of war in the air against Great Britain and the United States (Eichholtz, 2015, p. 2). Hitler himself believed that if Russia's immeasurable riches were brought under the control of Germany, then she would have enough means at her disposal with which to fight the battle of the continents (Moritz, 1970, p. 148). At another time he remarked that the one-time manpower expenditure with which to conquer the Soviet-Union would not be so great as that required by setting up synthetic production plants with which to satisfy the need for raw materials (Thomas, 1966, p. 300).

¹⁶ The order had been cancelled on the outbreak of war in September 1939 (Tooze, 2006, p. 338).

¹⁷ Germany and the Soviet-Union had far-reaching obligations towards each other. Through the Molotov-Ribbentrop pact of 1939 they had divided different spheres of interests in Eastern Europe, as well as divided Poland through a secret protocol. Moreover, the pact involved a trade deal through which the Soviet-Union supplied Germany with a number of raw materials.

Moreover, it was hoped that defeating the Soviet-Union would deal the final blow to British resistance. To a certain extent, this logic seems to be justified: Great Britain endured in resisting in the hope that at some moment other powers would join her (The National Archives of the UK¹⁸, 1940, pp. 263-271). A war cabinet memorandum of the 25th of May 1940 noted that without the assistance of the United States “we [Great Britain] do not think we could continue the war with any chance of success” (TNA, 1940, p. 263). On the 31st of July 1940, Hitler stated his belief that defeating the Soviet-Union would dash the hopes of British policymakers and would move them to capitulate or settle a peace (Boog et al., 1983, pp. 38-41; Halder, 2007a, pp. 144-145). This was due to the fact that a strike against the Soviet-Union would increase the possibilities of Japan to take action in the Pacific theatre, which in turn would effectively decrease the chances of American intervention on behalf of Great Britain (Halder, 2007a, pp. 144-145). Finally, the view that a strike against the Soviet-Union was possible was strongly reinforced by the low regard in which the Red Army was held by German policymakers and especially Hitler. In retrospect, they vastly underestimated the military potential of the Soviet-Union, which was likely based on the recent 1937 army purges and the Red army’s lackluster performance against Finland during the recent Russo-Finnish Winter War. Additionally, German generals believed that the great battle of the war had already been won with relative ease against France, which in 1940 had boasted an equivalent army in terms of manpower when compared to that of the Soviet-Union in 1941 (Mearsheimer, 2014, p. 320. For France see Dear, 1995, p. 401; Montagnon, 1997, p. 250. For the Soviet-Union see Adelman, 1985, p. 174; Rotundo, 1986, p. 23). Moreover, the French army had at the time been reinforced by elements of the BEF and the Dutch and Belgian armies while the German army had also been greatly strengthened in the meantime.

Planning for the attack on the Soviet-Union commanded most of the Reich’s industrial production during the period between October 1940 and April 1941. Firstly, production of munitions was drastically curtailed, since the earlier munitions drive that followed the invasion of Poland had ensured that the *Wehrmacht* was amply supplied with the necessary munitions¹⁹. Meanwhile, the rapid fall of France had drastically curtailed the need for munitions for the time period between June 1940 and April 1941. Instead of munitions, a renewed effort would be expended in the production of armaments for all three branches of the armed forces. The invasion of the Soviet-Union necessitated a vast increase in the army’s operational strength. The total number of divisions was to be raised from 143 to 180, of which 120 would fight on the Eastern front (Kroener, Müller & Umbreit, 1988, p. 513). Of these divisions, 20 would be armoured while an additional 10 would be mobilized (Eichholtz, 2015, p. 4). This effectively meant a doubling of tank strength in addition to phasing out the small and outdated Mark I and II models in favour of the medium Mark III and IV models. Additionally, large number of infantry weapons and artillery guns were modernized for the attack on the Soviet-Union.

¹⁸ Hereafter TNA.

¹⁹ The land forces possessed of enough munition to sustain twelve months of heavy fighting (Moritz, 1970, p. 6).

In the end, the preparations for operation Barbarossa allowed Germany to launch the largest military operation that has ever been put in motion in history (Clark, 1965, pp. 44-57). The logistical difficulties associated with such an operation, especially given the fact that Germany could not directly make use of Russian rails and had to rely on motorised transport, seemed to doom the operation before it had started (Creveld, 2004, pp. 143-158)²⁰. Remarkably however, the first months of fighting, while not attaining the ultimate destruction of the Red Army, ended in resounding German victories. Logistical constraints on the advance did introduce themselves and would give rise to a number of changes in the strategy for defeating the Soviet-Union; most notably the decision to attack economic targets over the drive towards Moscow. Nevertheless, the advance continued and for a short time there was the expectation that the Soviet-Union would indeed be defeated. For a brief moment Germany seemed to secure the *Großraumwirtschaft* that would be necessary to fight a battle of the continents. With her foes on land nearly defeated and the resources of the Soviet-Union within grasp, there could be an extensive reorientation towards the coming air war with Great Britain and, hypothetically, the United States. It is thus of the utmost interest to assess the changes in economic planning and the means necessary to finance these changes during this period of time.

The initial military successes of Operation Barbarossa can be understood as culminating a tendency towards Divergence III that had been started by the surprisingly quick and complete victory over France in May and June 1940. Before the attack on France, Germany had a clearly inferior strategic position in the war both with regard to the military balance of forces as well with regard to the raw materials and labour that were necessary to sustain the war economy. Somewhat more than a year later however, when it looked as though operation Barbarossa might meet with overwhelming success, the strategic situation had completely changed. Germany found itself in possession of a pan-European empire which promised an abundance of the necessary raw materials and labour. Moreover, with the projected demise of the Soviet-Union there were no longer any direct noteworthy military threats to Germany's European hegemony. For the first time since the start of the war, Hitlerite Germany could focus once again on preparing for the war of continents with the United States.

Reflecting this line of reasoning, the attack on the Soviet-Union, on the 22nd of June 1941, coincided with the wholesale readjustment of the German war economy; the *Umrüstung*. Henceforth,

²⁰ The *Oberkommando Wehrmacht* (OKW; high command of the armed forces) had bet the outcome of operation Barbarossa on its ability to destroy the Red army in one fell swoop, thus instantly knocking out the Soviet-Union, allowing full concentration on fighting an abiding war with Great-Britain and, if necessary, the United States. The feasibility of such a knockout blow was premised on the ability of the *Wehrmacht* to break the Red Army "on the Dnieper-Dvina river line within 500 kilometres of the Polish-German border" (Tooze, 2006, p. 453). The specifics of this attack were definite, since the *Wehrmacht*'s operational range did not extend further than 500 kilometres, mainly due to its fuel trucks being only able to efficiently carry fuel to such a distance when set up in a two-pronged fashion (ibid, p. 452). As such, if the Red army were to retreat behind the Dnieper-Dvina line, it would escape wholesale destruction and the war against the Soviet-Union would necessarily continue for a longer period. Quickly after the start of operation Barbarossa, it became clear that the Red army would indeed escape destruction, and thus allow the Soviet-Union to mobilize its vast reserves of manpower and industrial capacity in the struggle against Germany.

the *Luftwaffe* would enjoy absolute priority at the expense of the army. The tacit assumptions underlying this reprioritisation was that operation Barbarossa would dispatch with the last of Germany's substantial rival powers on land within a few months and that from that moment onward the (intercontinental) bomber would be of far greater worth (Eichholtz, 2015, p. 11). Hitler himself had remarked on the 20th of June that any manpower and capacity that would be freed by the reduced needs of the army ought in the first place to be allocated to expanding the air force (Eichholtz, 2015, p. 13) On the 23rd of June, the outline of the *Göring-programm* was made available. This programme was to form the main focus of the war economy for the coming years whose explicit aim was the fourfold strengthening of the *Luftwaffe* within two years (Eichholtz, 2015, p. 13). Erhard Milch, tasked with the production of aircraft, remarked that production would need to be increased by 150% by the summer of 1942, which meant that Germany would produce 3,000 aircraft per month (Thomas, 1966, pp. 448-451). In addition to vastly expanding productive capabilities for the manufacturing of aircraft, the programme called for immense increases in the production of lightweight metals crucial for aircraft manufacturing (i.e. aluminium, aluminium oxide, magnesium) and aviation fuel. The expansion of productive capabilities centred on providing fuel would henceforth command the highest priority until the end of the war (Birkenfeld, 1964, p. 164). The high demands for synthetic fuels set in the *Göring-programm* would result in some of the most inhumane systems of the German war economy; the synthetic aviation fuel refinery complex built by IG Farben at Monowitz made cruelly and mercilessly use of slave labour on an industrial scale from the nearby concentration camp, Auschwitz-Birkenau. The construction the industrial complex for IG Farben (close to Auschwitz-Birkenau) claimed the lives of 30,000 prisoners interned in the working camp (Wagner, 2000, p. 287).

To finance the vast increases in production with which Germany sought to embellish her military power, German expenditures increased again between the fiscal year of 1939/1940 and 1940/1941. During the latter year, the government spent 78 billion RM of which 58.1 billion RM (74.49%) went to defence related spending (Länderrat des Amerikanischen Besatzungsgebiets, 1949, p. 555; Oertel, 2015, p. 683). Once again however, the regular governmental revenues were greatly insufficient to meet these expenditures. The Reich had to continue to depend on short- and long-term loans in order to find the necessary means with which to finance her projects. A number of efforts were made to secure more loans, both from households and from businesses.

On the 31st of October 1941 the *Verordnung über die Lenkung von Kaufkraft* (Reichsministerium des Innern, 1941, p. 664) was published. It is important to note that at this moment, even though the German armies in the East encountered increasingly stubborn resistance, there was still the expectation that the Soviet-Union would be swiftly defeated. To finance the *Umrüstung*, the regime sought means through which it could have access to more savings. As such, this directive contained a scheme focused on further incentivizing the accumulation of savings by private households; The *Eisernes Sparen* scheme stimulated private households to save any excess purchasing power, which they

could, in any event, scarcely spend on durable consumer goods due to the unavailability of such goods. As a means of incentivizing, the program offered the possibility of having employers directly pay part of the salary into a special bank account (limited to 26 RM per month) which would neither be taxed nor subject to social security contributions. This bank account would however only be made available a year after the war had ended. As such, it seemed to offer German households with a meaningful outlet through which they could accumulate their purchasing power for after the war had ended, while it provided the regime with a greater amount of savings in bank accounts which it could, unbeknownst to the savers, siphon off by coercing banks to buy its government bonds or loans.

A virtually analogous scheme was introduced for German businesses in the same *Verordnung über die Lenkung von Kaufkraft* (Reichsministerium des Innern, 1941, p. 664). Through this scheme businesses were offered the possibility of investing their own excess savings into *Betriebsanlage-Guthaben* (capital investment credits). These were interest-free credits for investments in capital stock that would only be payable after the end of the war. Crucially, its redeeming value lay in the fact that any capital investments financed through *Betriebsanlage-Guthaben* would not be subject to taxation (Banken, 2018, p. 310; Oertel, 2015, p. 712). Even though the credits bore no interests, they provided German businesses with an interesting incentive to make their excess savings available to the state. Tellingly, there were a number of limitations imposed on paying into the *Betriebsanlage-Guthaben* scheme. These limitations did not stem from any reluctance on the part of the government to extend taxation free investment credits but were a psychological trick meant to ensure that businesses thought they had been provided with an excellent opportunity (Oertel, 2015, p. 712). The *Betriebsanlage-Guthaben* systems thus seems to be a compelling example of a system through which the German state attempted to induce businesses to make their excess savings from corporate profiteering available to the state, like they did for private households. The existence of these virtually analogous schemes introduced in the very same directive provides evidence that German state was indeed seeking to siphon the savings of businesses as well as those of households. Moreover, it shows that during this phase of the war the regime was not looking to forcefully expropriate capital owners of their profits in any fashion. To the contrary, the *Betriebsanlage-Guthaben* provided businesses with a possibility to avoid paying direct taxes to the state. Thus, the regime seems to have consciously preferred stealthily siphoning savings through private incentives in lieu of forceful taxation at this stage of the war. Such a stance seems to provide evidence for the claim that the changes in the strategic situation associated with Divergence III lead to a greater latitude for corporate profiteering and to a lesser inclination on the part of the regime to forcefully collect means of financing the war economy. Such inclinations would be due to the belief that the immediate war would soon be finished and that there would be no clear and present danger to German territorial security from the United States, so that preparations for war with the state over a far longer period could once again resume.

Battle of Moscow, December 1941

Subsequent changes in Germany's strategic situation were however to quickly dispel any illusions that the war in the East might be coming to a close. The opening phases of operation Barbarossa made it clear that the Soviet-Union would not be immediately destroyed as it was, despite grave losses, able to retreat substantial parts of the Red Army behinds the *Ostheer's* immediate reach. Instead of pursuing the original three objectives of advancing towards Leningrad, Moscow and the Ukraine, priority was now shifted to capturing the Ukraine. The 21st of August 1941 saw Guderian's *Panzergruppe 2*, which was part of army group Centre whose original objective was capturing the Soviet capital, move southward in a thrust towards the Ukraine (Creveld, 2004, pp. 169-170). The rest of army group Centre was meanwhile halted due to logistical constraints. The decision to swing South instead of moving towards Moscow was borne from a disagreement between the *Oberkommando des Heeres* (OKH; army high command) and Hitler. OKH believed that the main target of army group Centre should always remain the capture of Moscow. Hitler however thought that, since the initial results that were hoped for had not materialized, there should be a focus on capturing the raw materials in the South instead (Creveld, 2004, p. 169). The southern thrust was eventually successful when spearheads from army groups Centre and South met on the 15th of September, which led to the encirclement of large numbers of Soviet troops, and the occupation of the Ukraine (Murray & Millet, 2000, p. 130). Meanwhile, army group North had completed its encirclement of Leningrad. With its flanks secured the focus was only now shifted back to capturing Moscow. Six armies, including three armoured armies, were tasked with preparing an offensive towards the city, codenamed Typhoon. The offensive was initially highly successful, despite the hollowing out of German units by months of fighting and the inevitable logistical problems. Operation Typhoon was not expected by the Soviets and initially resulted in the encirclement and subsequent capture of 600,000 Soviet soldiers. Logistical constraints however once more reasserted themselves. The state of the captured Russian railways was destitute and the wheeled transportation companies had been thoroughly exerted after months of fighting. Important spare parts were not made available for the Moscow offensive, since German industry, at the express orders of Hitler, was more preoccupied with furnishing entirely new vehicles instead of producing spare parts for existing machines²¹ (Creveld, 1974, p. 76). Despite these grave material shortcomings, the final advance towards Moscow was authorised and started in mid-November. It failed to produce any decisive results, however. After months of ceaseless operations, the German advance, often sustained at breakneck speed, had finally petered out. The German offensive was running beyond the Clausewitzian culminating point of victory (Clausewitz, 1832/2007, pp. 209-218) and was now actively diminishing

²¹ This tendency has been attributed to Hitler's focus on the decorative-representational role of the armed forces and specifically that of the mobilized forces (Creveld, 2004, p. 143). As such there would have been a greater preoccupation with producing new machines with which to create well-ordered new formations instead of revitalising existing units.

the initial German superiority over its Soviet adversary. The large formations of army group Centre were utterly exhausted and had to be halted in front of Moscow (Reinhardt, 1992, pp. 222-248).

Having failed to capture Moscow the Germans momentarily lost the strategic initiative in the East. On the 5th of December 1941, the Red Army, which had heretofore largely assumed only a defensive position, launched its counteroffensive. Initially, the counterstroke was only aimed against army group Centre in order to remove the threat it posed to Moscow (Murray & Millet, 2000, pp 136-140). The Soviet counteroffensives accomplished large setbacks against the Germans. During the first two months of the offensive, the Germans lost 380,000 men (Kroener, Müller & Umbreit, 1988, p. 885). From the moment operation Barbarossa started on the 22nd of June 1941 and the end of March 1942, the Eastern army had lost 1.1 million men, that were either killed, wounded or missing (Wegner, 2000, pp. 863). This amounted to a staggering 35% of the Eastern army's initial strength that had been expended in only nine months fighting. To exact this price the Soviets undoubtedly lost more manpower and materials but due to their immense population they could better stomach these losses.

During this period other important events in the world were abound. On the 7th of December 1941, only shortly after the Soviets had started their counteroffensive, the Japanese navy struck the U.S. fleet at Pearl Harbour. Beforehand, Germany had committed herself, in an amended version of the tripartite pact, to joining Japan in a war against the United States, even if Japan would be the aggressor (Jäckel, 1981, p. 131-132; Jäckel, 1984, pp. 81) Even though the amended version of the pact was not formally concluded when the Japanese fleet struck Pearl Harbour, and there was thus no legal obligation on Germany to declare war, both Germany and Italy did declare war on the United States on the 11th of December 1941. While the bold Japanese strike against Pearl Harbour was an utter surprise to virtually the entire world, German policymakers had long reckoned with the possibility of a clash with the United States. The United States was already materially assisting Great-Britain through the lend-lease agreement and on 14th of August 1941 the two powers had issued the Atlantic charter. Hitler believed that war with the United States would be inevitable at some point (Friedländer, 1967, pp. 307-314). As a means of waging war against the United States on her own terms, Germany had already offered Japan the possibility of jointly waging a preventive war against the United States in early 1941 (Kershaw, 2000, p. 364). At this moment, the Japanese had rejected the offer since they instead favoured one more attempt to come to terms with the United States through diplomacy. This attempt failed however when the negotiating position of the United States vis à vis Japan substantially hardened due to German military victories in the Soviet-Union, which presented the United States with the possibility of being confronted with hostile great powers in both Europe and Asia (Heinrichs, 1988, pp. 92-214; Mearsheimer, 2014, pp. 219-224). As this final attempt at a resolution through diplomacy thus unravelled in late 1941, Japan started orienting herself towards a military strike against the United States and a war of conquest in the Pacific (Heinrichs, 1988, pp. 180-214).

The entry of Japan and the United States complicated the strategic situation that Germany faced. In the long term, the outcome of the war between the United States and Japan could not be in doubt; the United States' immense economic base vis à vis that of Japan would unquestionably allow it to eventually win a war of attrition against the Japanese. The United States' share of the world's economic wealth was eight times that of Japan in 1940 (Mearsheimer, 2014, p. 220). Moreover, pre-war Japan was extremely dependent on imports from the United States, and her industrial production would as such be heavily affected by the imposition of economic blockade that followed on the outbreak of hostilities (Barnhart, 1987, pp. 144-146). In the short term however the naval setback that the United States suffered at Pearl Harbour and the subsequent Japanese onslaught in the Pacific would necessitate that the Allies devote focus on the Pacific theatre before moving towards Europe. Even though the Western Allies quickly formulated the strategy of first taking care of the European theatre and only then fully moving against Japan, there is evidence that the United States did initially focus more on countering the threats posed by Japanese naval supremacy in the Pacific. In the initial stages of the American involvement in the war far more resources and manpower were allocated towards the Pacific theatre and this would only shift later in the war (Matloff, 1959, p. 398).

In essence this situation increased the timeframe available to Germany during which the Soviet-Union could be defeated before any domineering pressure could be brought to bear from the West. As was the case shortly after the fall of France, the conquest of the Soviet-Union was still seen as a necessary precondition for realizing a *Großraumwirtschaft* with which to wage a global war. Especially important were retaining control over the Ukraine, and the food that it provided, and gaining control over the Northern Caucasus oil fields at Maykop, Groznyy and Baku. Field-Marshal Keitel, head of the OKW, opined to General Thomas that Germany must capture the oil fields during the offensive of 1942 or else there would be no possibility of conducting operations in the next year (BA-MA RW19/167 p. 921). Hitler told an assembly of generals that “[i]f I do not get the oil of Maykop and Groznyy, then I must end this war (IMT, 1949b, p. 260). An additional advantage of the operations planned for army group South would be denying the Soviet-Union the material resources of the Caucasus, thus delivering that country a mortal blow through cutting off the necessary expedients for a continued sustenance of her war economy. As opposed to operation Barbarossa, during which three army groups attacked in different directions, the offensive in 1942 would mainly involve army group South advancing towards the industrial zone around Stalingrad and the Caucasus. Only after these objectives had been achieved could any planning for waging war against Great Britain and the United States again be contemplated.

The Battle of Moscow and the entry of the United States into the war thus provides an excellent case of Divergence I since Germany needed to radically shift priorities within her war economy. The ambitious plans calling for, among others, a fourfold expansion of the *Luftwaffe*, had to be halted to prioritise the type of production that would allow for rebuilding the Eastern armies in order to launch a renewed offensive aimed at knocking out the Soviet-Union through an attack towards the Caucasus.

These operations gained even more urgency due to the United States' entry into the war. Even though she was momentarily knocked out of balance by the Japanese surprise attack there was virtually no doubt that the eventual mobilization of her immense industrial resources would in time allow her to vigorously wage war against Germany. Only if the Soviet-Union were defeated in 1942 or in early 1943, and her resources and manpower subsequently swiftly incorporated into the German war effort could Germany hope to resist the Western Allies. As such, an all-out production drive was called for in order to manufacture the necessities for a new offensive in the East.

In the spring of 1942, the *Ostheer* was only a shadow of what it used to be before the commencement of operation Barbarossa nine months earlier (Wegner, 2000, pp. 863-882). Before any offensive operations could be undertaken, a vast rearmament in the East needed to be achieved. The first order of businesses in rebuilding the *Ostheer* was stockpiling adequate amounts of munitions which would be sufficient to satisfy the consumption that the hard fighting on the Eastern front brought. In the first months of the war, ammunition had been one of the highest prioritised staples, particularly since all policymakers were anxious to prevent the type of ammunition crises that had broken out during the start of the First World War (BA-MA RH15/159, pp. 330-333). However, after the fall of France ammunition consumption was drastically curtailed and, even including the planning for Barbarossa, it was possible to severely restrict the production of this good as well. After it became clear that the defeat of the Soviet-Union would be a lengthier affair, production quickly picked up again and surpassed even the high rates of production that were achieved just before the attack on France (Tooze, 2006, p. 576). This was at the express orders of Hitler himself, who again was anxious to ensure that German troops had enough ammunitions to prevent the situations of the First World War (Boelcke, 1969, p. 83). On the 10th of January 1942, the armaments programme for 1942 was announced²². In this programme the increased production of ammunitions occupied a central place. The increase in production was enabled through a diversion of steel rations towards the army's ammunition production, which was directly at the expense of predominantly the navy but also the air force. The army was to be prioritised in even more fields than just ammunition. Influxes of (forced) foreign labour were mainly allocated to production that the army needed after Speer had pressed Hitler on the 19th of March 1941 to prioritise the army over the *Luftwaffe* in labour allocations (Boelcke, 1969, p. 73). Manufacturing of tanks and locomotives were allocated respectively 60% and 90% more labour during 1942 (Tooze, 2006, p. 567). This was a trend which directly reversed the increased allocations of labour and resources to the *Luftwaffe* and the *Kriegsmarine* that had taken place only a few months ago, after the initial successes of operation Barbarossa (Seidler, 1986, pp. 256-260).

Following the battle of Moscow, open corporate profiteering became increasingly seen as being unwanted by German policymakers. The payment of dividends to stockholders was further regulated

²² Shortly after the announcement of the new programme for 1942, Albert Speer became Germany's minister for war production, after the death of his predecessor, Fritz Todt, in an air crash.

with the *Dividendabgabeverordnung* in August 1941 and May 1942 (Spoerer, 1996b, p. 88). Profits that were given to shareholders through dividends would be limited to only six percent. Any profits over this amount would flow directly to the state.

Moreover, the German state increasingly sought means of more forcibly recruiting labourers for work in the war economy after the military debacle at Moscow. Germany had always to a certain extent depended on the use of foreign labour. As such, there were about 436,000 foreign labourers in Germany, comprising 2% of the labour force, when war broke out in 1939 (Statistisches Reichsamt, 1940, p. 372). During the early stages of the war a number of Poles had been forcibly recruited to work for the German war economy while prisoners of war (POWs) were also forcibly put to work (Spoerer, 2020, p. 136). However, this approach to the utilization of forced labour at the time lacked any coherent thought; until at least December 1941 large numbers of Soviet POWs were inadequately cared for and were as such slowly starved to death. The conditions for these groups were atrocious and as such the mortality rates were egregiously high (Streit, 1990, pp. 142-149). Moreover, large numbers of Soviet POWs were shot under the German commissar order. It is estimated that approximately 2 million of the 3.35 million Soviet POWs captured during the first months of operation Barbarossa died while in German captivity (Spoerer, 2015, p. 81). Only in late October 1941 did some German policymakers realize that the Soviet POWs would be able to serve German interests through working in the war industries and as such somewhat higher rations and improved housing were extended to these prisoners (Streit, 1990, p. 143). Hitler decreed that Soviet POWs could henceforth also be employed in the war economy within Germany itself (Herbert, 1997, pp. 143-150) and thus had to be transported to the German homeland. Initially, the transports and the conditions within Germany continued to claim many lives of the Soviet POWs but increasingly German firms began to protest against this type of destruction against labourers for self-interested reasons. Constantly having to replace Soviet POWs that had been given some modicum of training in production was a very inefficient method and as such it would be preferable if the treatment of these labourers could be somewhat improved (Spoerer, 2001, p. 131). Gruesome methods for improving performance were launched by the national-socialist. For instance, when increased rations for all Soviet POWs were not forthcoming there was often a resort to a type of *Leistungsernährung* (performance feeding), in which the labourers that provided most heavy labour and had the best performance were given 'bonuses' of increased rations, while those that were unable to do so were cut in their supply of rations. This type of Darwinian struggle could sometimes ensure that productivity increased, but necessarily left some labourers in a vicious circle. Those that were not provided with increased rations would inevitably slack behind in the future only to find their rations being cut even further. *Leistungsernährung* had first been practised in Upper-Silesia on labourers recruited in the Eastern occupied territories (Eichholtz, 2015, p. 277) and was quickly spreading to other parts of the German war economy. After the military emergency of the winter of 1941/1942 a meagre type of *Existenzminimum* was thus extended to some of the Soviet POWs so that instead of starving they

could be forcibly and profitably employed in the war economy. It should be noted however that these slightly improved and often selectively extended living conditions were still extremely deficient as the monthly death rate in prisoner camps remained between 8% and 9% in March 1942 after stabilization had set in during that month (Streit, 1990, p. 143).

The use of forced labour provided by the Soviet POWs was however not deemed sufficient as the strategic situation deteriorated further after the Soviet counteroffensives in the winter of 1941/1942 (Spoerer, 2020, p. 137). In March 1942, Hitler named Fritz Sauckel General Plenipotentiary for Labour Deployment and tasked him with organising a pan-European system for recruiting civilian labour in German occupied territories. Sauckel eagerly set to this task and build a large system that would handle the recruitment of millions of European civilians. This allowed the *Wehrmacht* to conscript an ever-increasing number of German men, while Sauckel's organisation ensured that these reductions in the German labour force were being compensated by recruiting more foreign labourers. In May 1941, there were 2.9 million foreign civilians working in the German Reich which increased to 4, 6.1 and 7 million in May 1942, 1943 and 1944 respectively (Spoerer & Streb, 2013, p. 202). Such large additions to the pool of foreign civilian labour show that Sauckel's organization was indeed quite effective in finding labourers but do not convey an important change in methods that the German labour organisation now embarked upon. Until late 1941, recruitment of foreign labourers had mostly taken place through finding volunteers that would like to work in Germany because of the better working conditions that were offered there. However, after the defeat at Moscow the Germans increasingly had to rely on overt threats and naked force to recruit the necessary foreign labourers (Spoerer, 2015, pp. 78-82). Such policies were already in place in Poland and the occupied Eastern territories, where the Slavic people were from the beginning regarded as being largely inferior to the German people and as such brutally discriminated against. However, force was increasingly deployed in the Western occupied territories in order to recruit labourers for work in Germany as well (Spoerer, 2015, p. 82-83).

There is thus evidence that following the military setbacks incurred during operation Barbarossa the national-socialist policies for the continued sustenance of the war economy increasingly began to rely on the application of force against both POWs and civilians in its occupied territories. However, even as this process unfolded there was one gruesome yet glaring discrepancy between the needs of the war economy and the exploitation of the German occupied. Following the Wannsee conference on the 20th of January 1942, the national-socialist leadership had determined that the Jewish population in Europe was to be utterly exterminated through a series of mass-killings in extermination camps (Aly, 1998, p. 362; Browning, 2004, pp. 411-412). This decision was seemingly the last in an ever-escalating series of decisions that had sought to increasingly discriminate against the Jewish population in Germany and its occupied territories. Eventually, the peak of the Judaeocide occurred at the moment that Germany was frantically sourcing forced labourers from its occupied territories which lays bare the disparity between the ideological and material designs of Hitlerite Germany. As labour was becoming

increasingly scarce the national-socialist were wilfully exterminating a large group of people both through direct executions in the extermination camps and the destruction through labour practices. It would take one more deterioration of the military situation before even the strongly held national-socialist belief that the Jewish people should be destroyed would finally be superseded by the needs of the war economy.

Battle of Stalingrad, November 1942 - February 1943

The Soviet counteroffensive during the winter of 1941 had done a great deal of damage to the German *Ostheer* but had however not been enough to definitely forestall its intrusion of the Soviet-Union (Murray & Millet, 2000, pp 136-140). The German positions had held the line over the winter and there remained possibilities for further offensive actions in the 1942. In the summer of 1942, increased allocations of labour and resources to the army had resulted in the partial recuperation of the *Ostheer*'s offensive capabilities (Wegner, 2000, pp. 863). Meanwhile, the Axis powers were doing terrible damage to the Anglo-Saxon allies. Now that the United States had entered the war, German submarines could attack shipping to Great Britain without prejudice and as such wrecked great havoc; sinking one third more shipping in the first six months than in the entire previous year with fewer losses to the submarine fleet (Overy, 1995, pp. 47-52; Roskill, 1954, p. 599). On the Eastern front Manstein booked a large success in rolling up Soviet formations at the Kerch peninsula, where a numerically inferior German force succeeded in capturing 150,000 Soviet soldiers (Kershaw, 2000, p. 515; Wegner, 2000, pp. 930-942). Manstein next turned his attention to taking the fortress city of Sevastopol, which was the last thorn behind German lines that remained on the Crimea. Meanwhile, the Germans managed to fend off a Soviet counterstroke at Kharkov from the 15th until the 28th of May 1942 during which they eventually captured another 200,000 soldiers (Halder, 2007b, pp. 310-319; Kershaw, 2000, p. 515). Finally, Rommel's *Afrikakorps* captured the British fortress of Tobruk on the 21st of June 1942, which precipitated a large political crisis in Great Britain with Churchill having his authority challenged in the House of Commons (Jeffreys, 1991, pp. 85-111). The vast amount of supplies and other materiel that was seized at Tobruk allowed Rommel to advance his forces into Egypt. The successes of the German forces in the first half of 1942, quickly had Hitler holding in view the possibility of completing a gargantuan pincer movement that would see Rommel's troops push through beyond the Suez Canal to eventually link up with army group South coming down from the Caucasus (Weinberg, 1994, pp 350-351). This type of thinking utterly defied the limits with which the Germans saw themselves faced in the summer of 1942. However, it was believed that a successful completion of operation Blue, the attack towards the Caucasus, would at least help finishing off the Soviet-Union and would as such be an important preliminary for allowing this type of thinking on the scale of continents.

As with operation Barbarossa a year earlier, operation Blue achieved strategic surprise. The initial German advance was as such highly successful, all the more since the Soviets were slow to

reinforce their front (Wegner, 2000, pp. 966-973), due to the fact that they believed that the true German offensive would target Moscow (Erickson, 1975, pp. 354-355; Overy, 1995, p. 66). Following this initial success however, Hitler decided that army group South could achieve two objectives during the summer offensive of 1942. In directive 45 he opined that “[i]n a campaign of little more than three weeks, the broad goals set for the southern flank of the eastern front have been essentially achieved” (Hubatsch, 1962, p. 196; Kershaw, 2000, p. 528). In writing this, he believed that only an army led by Timoshenko had escaped destruction and that the field was thus open for further advances (Hubatsch, 1962, p. 196). Army group South was to be split into two groups, with the weaker army group B pursuing an attack alongside the Volga while army group A would move into the Caucasus in conjunction with the forces still at the Kerch peninsula (Hubatsch, 1962, pp. 196-201). The main advance would thus still centre on conquering the Caucasus but now an additional prong would be aimed to secure Stalingrad. The oil fields at Maykop, thoroughly destroyed by retreating Soviet forces, were taken on the 9th of August, only one and a half month after the start of operation Blue (Irving, 1977, p. 414).

However, as during the previous year, the promising initial advances would be followed by more severe setbacks. While the Germans were on the offensive in the South, the Soviets launched attacks against army groups Centre and North. The former was attacked at Rzhev (Weinberg, 1994, p. 427). In the North, the Soviets attempted to break the siege of Leningrad during the end of August (Glantz, 2001, pp. 97-107). While the German forces besieging the city, reinforced by forces coming in from the Crimea, were able to prevent a definite break of the siege, they had to pay a high price for this success. Moreover, any prospects of taking the city with the newly arrived reinforcements was lost after the defence of the besieging forces had only just succeeded (Irving, 1977, pp. 416-418). Simultaneously the advance in the South continued but no definitive conclusions were reached; the Soviets retreated and voluntarily gave up ground to the advancing Germans hence alluding any definitive battle in the South. The Germans were making “a blow into thin air” until Stalin ordered his forces on the 27th of July to make a stand through the infamous order 227, which stipulated that the Soviet forces “take not one step back”. The order included the establishment of penal battalions consisting of court-martialled soldiers and officers that were sent to the most dangerous sections of the front, blocking detachments operating in the army’s rear which had orders to shoot routing units, and the general prohibition of retreating without orders from superior officers (Krivosheev, 1997, pp. 91-92). The impetus of the German summer offensive was quickly running out. Paulus’ 6th army did reach the Volga on the 23rd of August but found Stalingrad to be strongly fortified. Heavy street to street fighting erupted for control over the Soviet industrial centre. Echoing Stalin’s resolve to defend the city, Hitler referred to the battle ensuing around Stalingrad during his *Sportpalast* speech of 30 September 1942 and stated that “nobody will get us away from this place again” (Domarus, 1973, p. 1914; Kershaw, 2000, p. 536). Both sides thus having committed themselves Stalingrad would in the next months turn into a dreadful battlefield at which

Germany would face her largest defeat while the Soviet-Union paid a horrendously large price to secure her victory.

Over the course of several months, the fighting in Stalingrad had raged between Germany and the Soviet-Union. The Soviet commander Zhukov sought to draw increasingly more German reinforcements into the city and its surroundings, while secretly massing his own troops for a counterstroke against the Romanian 4th army that was defending the flanks of the German 6th army. The Soviets attacked this section of the front on the 19th of November 1942, achieved a breakthrough the next day and already linked up with the other Soviet forces on the 22nd of November (Gruchmann, 1967, p. 191; Kehrig, 1992, pp. 80-81). 220,000 German soldiers and 30,000 soldiers of other Axis allies were now surrounded in Stalingrad. Already on the 21st of November, the 6th army was ordered not to break out in case the envelopment succeeded but instead to stand its ground (Kehrig, 1974, p. 163; Kehrig, 1992, p. 82). This order was repeated on the 24th of November when Hitler chose to supply the army through airlifts, even after hearing that such an operation was highly risky given the fact that Paulus' supply situation was already precarious. Nevertheless, the airlifts would continue until Hoth's 4th Panzer army would be in position to relieve the 6th army. Hoth's attempt started on the 12th of December but quickly stranded and slowed down however, due to the fact that a large number of the offensive formations promised to the liberation offensive were tied down elsewhere (Wegner, 2000, p. 1144). Eventually, by the 20th of December Hoth's offensive had lost its impetus, even after having received some reinforcements. By that time the 6th army's chances of breaking out itself and bridging the distance to Hoth's forces were becoming increasingly remote. The inadequacy of supplying the army through the air quickly exhausted whatever stocks of supplies were still available prior to the encirclement. Especially food supplies quickly diminished over the course of December (Müller, 1992, Wegner, 2000, p. 1152). Having been restricted in the supply of food, fuel and ammunition, there could be no question of an independent breakout of the 6th army in late December. The fate of the 6th army became effectively sealed on the 23rd of December, when Manstein, commander of the newly created army group Don²³, had to take forces from Hoth's attempt to break the siege of Stalingrad to reinforce other sectors of the front (Gruchmann, 1967, p. 193). The operation to relieve the trapped 6th army at Stalingrad thus failed completely (Kehrig, 1981, p. 187).

The withdrawals from Hoth's force on the 23rd were necessary to prevent Soviet breakthroughs on other sectors of army group Don's front, which would subsequently threaten the disintegration of the entire German southern front. Such an event would have far-reaching consequences, since it would mean that army group A in the Caucasus would also be cut from its lines of communication. Moreover, the forces of army group A were strongly needed to patch sectors of the front left dangerously vulnerable by army group Don (Wegner, 2000, p. 1175). Army group A was eventually withdrawn by the way of

²³ This newly created army group comprised elements previously belonging to army group B including Paulus' 6th army at Stalingrad, Hoth's 4th Panzer army and the two Romanian armies.

Rostov and over the Kerch straits onto the Crimea peninsula. This operation, which was highly necessary on operational grounds in order to overcome the possibility of having another substantial number of troops being encircled by Soviet armies, signalled the last chance of definitely attaining and exploiting the fabled resources of Caucasus. The failure to attain these resources during the course of operations belonging to plan Blue, and the subsequent defeat that followed put a time stamp on the viability of Hitlerite Germany. Having failed to attain the resources and manpower that would lead to a *Großraumwirtschaft*, Germany would indubitably fall to the overwhelming material dominance of the Allies.

This situation provides an excellent case of deteriorating convergence. After the defeats around Moscow in the winter of 1941/1942, the German war economy was already oriented towards producing as much direct output for the army as possible with which to rebuild the *Ostheer*. With renewed offensive capabilities, this army could be used to definitely seize the resources of Caucasus while simultaneously denying these to the Soviets. In one stroke, this would complete the German *Großraumwirtschaft* while dealing a heavy blow to the Soviet war effort. In the event however, these operations did not succeed and at the beginning of 1943 Germany saw its forces on the Southern front increasingly being beaten back, after having irrevocably lost near a quarter of a million men at Stalingrad. The mortal blow had been dealt to the Germans instead of to the Soviets. After the debacle at Stalingrad and the retreat from the Caucasus, the *Ostheer* found itself holding approximately the same positions as before the summer offensive of the previous year. Even more problematic were the enormous losses that had been incurred over the previous year. From May 1942 until April 1943 the *Ostheer* lost approximately 1.37 million men (Eichholtz, 2015, p. 118). Moreover, a vast quantity of especially heavy equipment such as tanks, artillery, and airplanes were lost in the fall of Stalingrad and the retreat from the Caucasus. Recognizing their precarious situation, the German high command ordered the *Ostheer* to remain on the defensive so that its forces might be rebuilt (Eichholtz, 2015, p. 120). From now on, having lost the strategic initiative in the East, the Red Army would be largely dictating the pace of operations on the Soviet front. There could no longer be any hopes of readjusting the war economy to focus on fighting a long and abiding war at sea and in the air against the Anglo-Saxon Allies. Instead, the existing orientation towards immediate output would need to be further intensified in order to produce the armaments with which the Soviet front could be stabilised.

One illusionary plan that was voiced for stabilising the front in the East was to build a large set of fortifications behind which the *Ostheer* could safely reside, slowly nursing its strength until it would eventually be ready for offensive operations again. Such an endeavour would however need time to be completed and as such it was envisioned that yet another limited offensive would be necessary to hinder the offensive power of the Red Army. Such an offensive would be aimed at the Soviet salient at Kursk, were five Soviet armies occupied a bulge in the German lines (Guderian, 1996, p. 306). Were these armies to be cut off and defeated, the Red Army would have been dealt a grave blow to its offensive

potential. Attacks in the Kursk sector were envisaged to fight the Red Army to a temporary stalemate, allowing for the building of the *Ostwall* along the Dnieper in the rear guard. As such, once again the *Ostheer* would need to be the primary beneficiary of German armaments production. Production focused mostly on the type of weapons that would also make for good propaganda announcements (Brechtken, 2017, pp. 227-238). On the 22nd of January 1943 Speer presented the *Adolf Hitler Panzer* programme, an armaments programme that demanded a fourfold increase in tank production within two years (Eichholtz, 2015, p. 121). This programme had already been prepared during the winter of 1942 during which Hitler had given his permission to take whatever materials and manpower the programme needed. The eventual programme envisioned even higher production rates of tanks, which would have to be brought about by taking resources, material and manpower from other sectors of the war economy “even if by these measures other important branches of the armament industry are adversely affected for a time” (United States Strategic Bombing Survey, 1945, p. 168). Special hopes were placed on the newly manufactured Panther and Tiger tank models, with which it was hoped to easily effectuate breakthroughs in the Soviet lines (Guderian, 1996, p. 306). Similar production drives were embarked upon for producing more artillery guns and infantry munition. Until the 15th of March all armaments production was to be exclusively reserved for the Eastern front (Kroener, Müller & Umbreit, 1989, p. 649).

From this moment onward, German policymakers increasingly employed the rhetoric of fighting a total war in which not only the subjugated peoples in the occupied territories were to be exploited to the utmost extent but also the German people needed to increasingly make sacrifices. Private businesses that were not actively contributing to the war effort were forcibly shut down so that labour would be made available for war industries. The state bureaucracy was drastically weeded out to enable any surplus labour to either work in key industries or sent to the Eastern front (Kershaw, 2000, pp. 566-567). For the first time in the war German women between the age of seventeen and fifty years old were conscripted (Michalka, 1985, pp. 294-295). The mobilisation for total war of the female labour force only yielded 1.5 million women who reported themselves for labour duty, of which 700,000 could only be given part-time assignments (Eichholtz, 1969, pp. 230-232). Female participation in the labour force was already high for the period and even another more coercive mobilization drive could turn up the numbers of female workers that the German war economy needed. This further reinforces the view that even before the drive towards total war, initiated after Goebbels’ speech on the 18th of February 1943, the German war economy was already nearly stretched to the utmost.

Speer focused strongly on rationalizing the war economy so as to effectuate the higher rates of production that were necessary to complete the ambitious programmes that had been embarked upon after the defeat at Stalingrad. Rationalisation meant that production should be concentrated at the most productive companies in the German economy. As such, workers should be freed from the smaller and relatively more inefficient companies, and especially from consumer industries, so that they could be redeployed at the companies with the highest efficiency rates. Moreover, Speer heavily banked on

technological improvements and the ability to produce certain weapons in unitary series to boost efficiency (Eichholtz, 2015, p. 127). For the first time during the war, forcibly shutting down certain organizations so as to use their employed labour elsewhere became an important instrument in rationalising the war economy (Eichholtz, 2015, p. 128). As the strategic situation was becoming increasingly desperate, so the policy decisions made by the regime became increasingly coercive.

Perhaps the most telling example of Hitlerite Germany's increasing desperation with regard to fulfilling its highly ambitious armaments programmes was the tragic situation with regard to the treatment of the Jewish population in Germany and its occupied territories. As has been described, German policymakers had decided on the utter destruction of the Jewish population in Europe (Aly, 1998, p. 362; Browning, 2004, pp. 411-412) and to this end had pursued a conscious policy of Judaeocide that peaked during 1942. However, during the later phases of the war, and here we do stray somewhat further from the original timeline, it became increasingly clear that the ideological preferences of the national socialists had to be overridden by more pragmatic considerations regarding the sustenance of the German war economy. In March 1944 the *Jägerstab* was founded, which quickly launched the Fighter Emergency Programme (*Jägernot*) to counter the increasing dominance of the Allies in the air war over Germany. To provide the labourers for one more surge in fighter aircraft production, one of the last untapped sources of labour within Germany's strategic reach was employed; the Jewish population of Hungary. Most of the Hungarian Jews were forcefully deported to provide labour in German industries (Spoerer, 2020, p. 142). The period after the defeat at Stalingrad until the end of the war would thus be coupled with increasingly violent and repressive methods for ensuring the continued sustenance of the war economy. Foreign labourers, concentration camp inmates, prisoners and even Germans conscripted for labour duty were forcibly employed in the war economy as the strategic situation continued to deteriorate. Tellingly, German policymakers never seriously contemplated even a limited surrender until the very last weeks of the conflict and as such consciously prolonged the destructive hostilities even though it must have been clear after the defeat at Stalingrad, or at the latest after the subsequent failure at Kursk, that there could be no hope for an eventual German victory.

Conclusion

In this paper I have mainly sought to demonstrate the validity of two claims. Firstly, during the Second World War Germany was not fighting one homogenous type of war against both the Soviet-Union and Anglo-Saxon Allies, but instead two different types of wars against either of its adversaries. In the East it relied on its army so as to knock out the Soviet-Union, its last potential continental competitor, and secure the raw materials, mainly from the Ukraine and the Caucasus, with which to complete a truly autarkic *Großraumwirtschaft*. The strike against the Soviet-Union was originally predicated as a quick colonial venture against a foe that was, albeit far more numerous, extremely

deficient in fighting power. The stiffness of the Soviet defences and the astonishing drive with which, time and again, additional forces were found put an end to the prospect of a quick victory. Instead, the war devolved into a protracted struggle between the two states that eventually shifted towards a defeat for Germany, especially after the catastrophic failure of its summer offensive in 1942. The setbacks on the Eastern front meant that Germany could never fully transition its war economy to focus on fighting a war at sea and in the air against the Anglo-Saxon Allies. For such an endeavour it not only required advanced weaponry such as large numbers of battleships, aircraft carriers and sophisticated strategic bombers, but also the necessary fuel to keep such mechanized formations in constant action. While the setbacks incurred by the *Ostheer* did prevent the transition to the manufacturing of such weapons the desire to do so clearly existed. Immediately after the start of operation Barbarossa, arguably the moment that Germany was at its zenith of power, orders were given to effectuate an *Umriistung* of the German war economy. However, these orders subsequently had to be quickly countermanded after the extent of the losses from the Battle of Moscow became clear. Nevertheless, there was again talk of such a reorientation shortly after the successes on the Eastern front and in North-Africa in the first half of 1942. Only the defeat at Stalingrad and the withdrawal from the Caucasus would definitely ensure that the primacy of the war economy would come to rest squarely at providing the army with all its necessities. The withdrawal from the Caucasus moreover meant that the necessary oil resources would not be attained.

Germany had to fight both of these wars due to its ambitious goals on the world stage. Hitler was neither satisfied with revising the treaty of Versailles nor with uniting all German-speaking people into one German state. The interwar policy of appeasement pursued by Great Britain and France had in fact already all but satisfied these ambitions. Nevertheless, in 1939 German annexed the remainder of Czechoslovakia and invaded Poland. The eventual goal of Hitlerite Germany was *Weltmachtstellung* in which the German state would have hegemony in the world. This type of ambition in foreign policy would necessarily bring about an eventual confrontation with the United States, and would as such result in the need to prepare for two different types of war.

Secondly, the German war economy was financed not merely by taxes that are in theory coercively extracted from the domestic population but also consisted for a large part of loans. Both consumers and producers were stimulated to save as much as they could, something that was relatively easy since wartime regulations ensured that consumers could not discreetly spend their income while producers did not have many investment possibilities. The paradoxical situation of German producers generating wartime profits, instead of having these profits fully taxed by the state, can thus be explained as a means of silent war financing. By accumulating profits and subsequently saving these they were made available for the German state as loans, to be used for further investments in other sectors that were deemed more vital to the war effort. The advantage for the German policymakers would lie therein that producers would not lose their profit incentive to produce as much and efficiently as possible. In

theory, the savings accounts at the banks promised any profiting producer a higher standard of living after the war had come to an end. Only if Germany would have been victorious and the economy subsequently readjusted to provide for civilian needs would it have become clear that these savings only existed on paper and had since long been used for German war production. Such a situation would certainly have been embarrassing to German policymakers but would likely have been explained away as a necessary sacrifice in the war. Moreover, it might have been paid for by levying high reparations on the defeated states in an eventual peace settlement.

There is some evidence that Hitlerite Germany did indeed prefer this method of war financing. Complex schemes to boost savings of business were launched in the case of Divergence III (fall of France and invasion of the Soviet-Union) in which the need to fight a short-term war receded and there was increased freedom for Germany to more leisurely pursue long-term investments. Only when the strategic situation changed so that there was suddenly a need to fight in order to ward off a threat to Germany's direct territorial integrity did the Germans resort to ever more coercive means of securing enough finances for the continuation of the war. This was shown in the cases of Divergence I (invasion of Poland and the battle of Moscow) and the case of deteriorating convergence (the battle of Stalingrad). Savings at banks might be less forthcoming when it was feared that the war would eventually be lost. In any event, German policymakers would not have been able to patiently wait for enough savings to become available but would have had to find some fashion in which to coercively confiscate the means with which to further finance the war. Especially after the defeat at Stalingrad such considerations would have become paramount, as the rhetoric of total war indeed shows. The regime grew increasingly brutish and gradually resorted to ever more cruel and inhumane methods for the continued sustenance of the war economy. These methods extended beyond simply employing more forcible means to obtain the necessary finances for the war. Labour, for instance, was increasingly directly procured by outrightly forcing people to work in Germany's armaments industry. In the final years of the war there was widespread use of forced deported labour from occupied territories and POWs. Additionally, the prisoners in the concentration camp system were quite literally worked to the death.

The fact that the regime only grew increasingly brutal over time in pursuing the needs of the war economy should however not distract us from two important observations. Firstly, the national-socialist regime was wired for inhumane brutality from its very inception. To be sure, it did only increasingly adopt ever more brutal tactics against its own population and that of the occupied territories, that it had so far left in relatively peace, when the strategic situation deteriorated. However, extreme violence against certain parts of the civilian population was carried out from the beginning of the national-socialist rule. Moreover, the wanton acts of violence that were carried out against parts of the populations of occupied territories did not follow from any type of coherent economic thought but were perpetrated in pursuance of a vile and misguided ideology. The infamous *Einsatzgruppen*, following in the wake of the invading armies in 1941, perpetrated direct acts of genocide on specific parts of the

civilian population directly after territory had been conquered by the *Ostheer*. As early as the 20th of January 1942 senior government officials decided during the Wannsee conference to deport and extinguish with Jewish populations of a great many states in extermination camps. These actions ran directly counter to any economic planning that might seek to incorporate the populations of the occupied territories in increasing the production of the German war economy. Even while Germany was frantically searching the entirety of Europe for the labourers it needed to sustain its industries, it was simultaneously perpetrating acts of genocide against millions of people that would otherwise have been employed in the war economy. Only when the strategic situation deteriorated even further, especially after the disastrous defeat at Stalingrad, did Germany resort to also forcefully conscripting these demographic groups, that it had until then been exterminating, in its war economy,

Secondly, the fact that increasingly brutal tactics were only employed later in the war to sustain the war economy to the utmost should not be seen as indicative of the fact that until then the Germans had only half-heartedly pursued the economic war effort. The dual nature of the war meant that an all-out production drive reserved for the land forces from the very start of the war would be highly undesirable. Investments had to be made in developing the necessary technologies and industrial capabilities with which to strengthen the *Kriegsmarine* and the *Luftwaffe* with the type of weapons which could be used to wage war against the Anglo-Saxon Allies. The most notable example of this type of reasoning was the decision to deprioritize the production of ammunitions in the period between the fall of France and the invasion of the Soviet-Union. Had production of ammunitions continued as before during this eight-month period, the land forces would have found themselves with extremely high stocks of ammunitions that would have been excessive even given the extremely high consumption of ammunition during operation Barbarossa.

It is thus likely that the apparent failure to pursue a total war in economic terms from the very beginning was not due to unwillingness on the part of German policymakers or in the naïve hope that any war would be over quickly. Hitler's foreign policy ambitions ruled out short and strictly delineated wars over the restoration of earlier held German territories but were instead sweeping and total in character. Moreover, the experiences of the First World War also suggested that any modern continental war would likely bog down into prolonged fighting and would hence not be over quickly. The development of German economic and military doctrine during the interwar years reflected these considerations, even before the national socialists definitely rose to power in 1933, and stated that any future war would be all-encompassing, demanding great exertions on the German population. As such, even before hostilities commenced, Germany had been on a drastic economic crash course to ensure that she would enter any conflict with modernized armed forces. The fruits of the German economic booms during the later 1930s did therefore not flow to German consumers but were invested in the military-industrial complex. This type of economic prioritisation did not fundamentally change with the outbreak of general war over the invasion of Poland on the 1st of September 1939 but only intensified further. As

such, from the very beginning the German war economy was oriented to working fully to exhaustion (*ganz zur Ausschöpfung*) and was never seriously restrained to instead focus on providing for increased civilian goods.

References

- Adelman, J. R. (1985). *Revolution, armies, and war: a political history*. Boulder, CO: Lynne Rienner.
- Allison, G. (2017). *Destined for War: can America and China escape Thucydides's trap*. London: Scribe.
- Aly, G. (1998). *Endlösung: Völkerverschiebung und der Mord an den europäischen Juden*. Frankfurt am Main: Fischer Taschenbuch.
- Aly, G. (2006). *Hitlers Volksstaat: Raub, Rassenkrieg und nationaler Sozialismus*. Frankfurt am Main: Fischer Taschenbuch.
- BA-MA RH15/159, pp. 330-333
- BA-MA RW19/167 p. 921
- Balderston, T. (2010). Industrial Mobilization and War Economies. In J. Horne (Ed.), *A Companion to World War I* (pp. 217-233). Malden, MA: Wiley-Blackwell.
- Baldwin, P. M. (1981). Clausewitz in Nazi Germany. *Journal of Contemporary History*, 16(1), 5-26.
- Banken, R. (2018). *Hitlers Steuerstaat Die Steuerpolitik im Dritten Reich*. Berlin: De Gruyter.
- Barnhart, M. A. (1987). *Japan Prepares for Total War: The Search for Economic Security, 1919-1941*. Ithaca, NY: Cornell University Press.
- Beckett, I., Bowman, T., & Connely, M. (2017). *The British Army and the First World War*. Cambridge: Cambridge University Press.
- Bell, P. M. H. (2011). *Twelve turning points of the Second World War*. New Haven: Yale University Press.
- Birkenfeld, W. (1964). *Der synthetische Treibstoff, 1933-1945: ein Beitrag zur nationalsozialistischen Wirtschafts- und Rüstungspolitik*. Göttingen: Musterschmidt.
- Bloch, C. (1976). Die Wechselwirkung der Nationalsozialistischen Innen- und Aussenpolitik. In M. Funke (Ed.), *Hitler, Deutschland und die Mächte*. Düsseldorf: Droste Verlag.
- Boelcke, W. A. (1969). *Deutschlands Rüstung im zweiten Weltkrieg: Hitlers Konferenzen mit Albert Speer, 1942-1945*. Frankfurt am Main: Athenaion.
- Boelcke, W. A. (1977). Kriegsfinanzierung im internationalen Vergleich. In F. Forstmeier & H. E. Volkmann (Eds.), *Kriegswirtschaft und Rüstung, 1939-1945*. Düsseldorf: Droste Verlag.
- Boelcke, W. A. (1985). *Die Kosten von Hitlers Krieg*. Paderborn: Schöningh.
- Boog, H., Förster, J., Hoffmann, J., Klink, E., Müller, R.-D., & Ueberschär, G. R. (1983). *Das Deutsche Reich und der Zweite Weltkrieg: Der Angriff auf die Sowjetunion* (Vol. 4). Stuttgart: Deutsche Verlags-Anstalt.
- Bouverie, T. (2019). *Appeasing Hitler: Chamberlain, Churchill and the road to war*. London: The Bodley Head.
- Brandt, K. (1954). *Management of agriculture and food in fortress Europe*. London: Cumberlege for Stanford University Press.
- Brechtken, M. (2017). *Albert Speer: eine deutsche Karriere*. München: Siedler.
- Browning, C. R. (2004). *The origins of the Final Solution: the evolution of Nazi Jewish policy, September 1939-March 1942*. Lincoln: University of Nebraska Press.

- Buchheim, C., & Scherner, J. (2006). The Role of Private Property in the Nazi Economy: The Case of Industry. *The Journal of Economic History*, 66(2), 390-416.
- Bullock, A. (1962). *Hitler: a study in tyranny* (Revised ed.). Harmondsworth: Penguin Books.
- Bushey, C., Edgecliff-Johnson, A., & Stacey, K. (2020). Trump invokes federal law to compel General Motors to make ventilators. *Financial Times*. Retrieved from <https://www.ft.com/content/9328d358-1588-4498-97d9-0dd43255a076>
- Carr, W. (1972). *Arms, autarky and aggression: A study in German foreign policy, 1933-1939*. London: Arnold.
- Carroll, B. A. (1968). *Design for total war: arms and economics in the Third Reich*. The Hague: Mouton.
- Cawood, I., & McKinnon-Bell, D. (2001). *The First World War*. London: Routledge.
- Chase-Dunn, C., Kwon, R., Lawrence, K., & Inoue, H. (2011). Last of the Hegemons: U. S. Decline and Global Governance. *International Review of Modern Sociology*, 37(1), 1-29.
- Churchill, W. (1951). *The Second World War: The Hinge of Fate* (Vol. 4). London: Cassell.
- Clark, A. (1965). *Barbarossa: The Russian-German Conflict, 1941-45*. New York: William Morrow & Co.
- Clark, C. M. (2013). *The sleepwalkers: how Europe went to war in 1914*. London: Penguin.
- Clausewitz, K. (2007). *On War* (M. Howard & P. Paret, Trans.). Oxford: Oxford University Press. (Original work published 1832).
- Coleman, J. (2020). Italy will rush 10,000 student doctors into service, scrapping final exams. *The Hill*. Retrieved from <https://thehill.com/policy/healthcare/public-global-health/488191-italy-will-rush-10000-student-doctors-into-service>
- Creveld, M. (1974). War Lord Hitler: Some Points Reconsidered. *European Studies Review*, 4(1), 57-79.
- Creveld, M. (2004). *Supplying war: Logistics from Wallenstein to Patton*. (2nd ed.). New York: Cambridge University Press. (Original work published 1977).
- Daalder, I. H. (2017). Responding to Russia's resurgence: Not quiet on the eastern front. *Foreign Affairs*, 96(6), 30-38.
- Dear, I. C. B. (1995). *The Oxford companion to the Second World War*. Oxford: Oxford University Press.
- Dietrich, O. (1955). *The Hitler I knew: Memoirs of the Third Reich's press chief*. London: Skyhorse publishing.
- Domarus, M. (1973). *Hitler: Reden und Proklamationen* (Vol. 4). Wiesbaden: Schmidt Verlag.
- Dülffer, J. (1973). *Weimar, Hitler und die Marine: Reichspolitik und Flottenbau 1920-1939*. Düsseldorf: Droste.
- Eichholtz, D. (1969). *Anatomie des Krieges: neue Dokumente über die Rolle des deutschen Monopolkapitals bei der Vorbereitung und Durchführung des zweiten Weltkrieges* (Vol. 2). Berlin: VEB Deutscher Verlag der Wissenschaften.
- Eichholtz, D. (2015). *Geschichte der deutschen Kriegswirtschaft 1939–1945* (3rd ed. Vol. 2). Berlin: De Gruyter.

- Erickson, J. (1975). *Stalin's war with Germany* (Vol. 1). London: Weidenfeld and Nicolson.
- Eucken, W. (1948a). On the Theory of the Centrally Administered Economy: An Analysis of the German Experiment. Part I. *Economica*, 15(58), 79-100.
- Eucken, W. (1948b). On the Theory of the Centrally Administered Economy: An Analysis of the German Experiment. Part II. *Economica*, 15(59), 173-193.
- Fakiolas, T. E., & Fakiolas, E. T. (2009). Domestic Sources of Russia's Resurgence as a Global Great Power. *Journal of International and Area Studies*, 16(2), 91-106.
- Fensch, D., & Groebler, O. (1971). Imperialistische Ökonomie und militärische Strategie. Eine Denkschrift Wilhelm Groeners. *Zeitschrift für Geschichtswissenschaft*, 19(9), 1167-1177.
- Fest, J. C. (1975). *Hitler* (R. Winston & C. Winston, Trans.). New York: Vantage Press.
- Fèvre, R. (2018). Denazifying the economy: Ordoliberalism on the economic policy battlefield (1946-50). *History of Political Economy*, 50(4), 679-707.
- Fischer, K. P. (1995). *Nazi Germany: a new history*. New York: Continuum.
- François, H. (1913). *Feldverpflegung bei der höhere Kommandobehörden*. Berlin.
- Friedberg, A. (2015). *A contest for supremacy: China, America, and the struggle for mastery in Asia*. New York: Norton.
- Friedländer, S. (1967). *Prelude to downfall: Hitler and the United States 1939-1941*. London: Chatto & Windus.
- Frieser, K.-H. (2005). *The Blitzkrieg Legend: The 1940 Campaign in the West* (J. T. Greenwood, Trans.). Annapolis: Naval Institute Press.
- Gaddis, J. L. (1986). The Long Peace: Elements of Stability in the Postwar International System. *International Security*, 10(4), 99-142.
- Gat, A. (2001). Ideology, national policy, technology and strategic doctrine between the world wars. *Journal of Strategic Studies*, 24(3), 1-18.
- Geyer, M. (1980). *Aufrüstung oder Sicherheit: die Reichswehr in der Krise der Machtpolitik 1924-1936*. Wiesbaden: Steiner.
- Gillingham, J. (1986). The "Deproletarianization" of German Society: Vocational Training in the Third Reich. *Journal of Social History*, 19(3), 423-432.
- Glantz, D. M. (2001). *The siege of Leningrad, 1941-1944: 900 days of terror*. London, UK: Brown Partworks Ltd.
- Goebbels, J. (1944). *Der steile Aufstieg: Reden und Aufsätze aus den Jahren 1942/43*. Munich: Zentralverlag der NSDAP.
- Gruchmann, L. W. (1967). *Der Zweite Weltkrieg: Kriegführung und Politik*. Munich: Deutscher Taschenbuch Verlag.
- Guderian, H. (1996). *Panzer Leader*. New York: Da Capo. (Original work published 1952).
- Habeck, M. R. (2014). *Storm of steel: the development of armor doctrine in Germany and the Soviet Union, 1919-1939*. Ithaca, NY: Cornell University Press.
- Hahn, F. (1987). *Waffen und Geheimwaffen des Deutschen Heeres, 1933-1945: Panzer- und Sonderfahrzeuge, "Wunderwaffen", Verbrauch und Verluste* (Vol. 2). Koblenz: Bernard & Graefe.

- Halder, F. (2007a). *The private war journal of Generaloberst Franz Halder: the campaign in France. 10 May 1940 - 30 October 1940 (N16845-D)* (Vol. 4). Stuttgart: European Command.
- Halder, F. (2007b). *The private war journal of Generaloberst Franz Halder: the campaign in Russia. Part II: 1 August 1941 - 24 September 1942 (N16845-G)* (Vol. 7). Stuttgart: European Command.
- Hansard, HC Deb 31 March 1939, vol. 345, col. 2415.
- Hansard, HC Deb 4 June 1940, vol. 361, col 796.
- Hauner, M. (1978). Did Hitler want a world dominion? *Journal of Contemporary History*, 13(1), 15-32.
- Haupt, W. (1965). *Sieg ohne Lorbeer: der Westfeldzug, 1940*. Holstein: E. Geerdes Verlag.
- Hayes, P. (1980). A Question Mark with Epaulettes? Kurt von Schleicher and Weimar Politics. *The Journal of Modern History*, 52(1), 35-65.
- Hayes, P. (2001). *Industry and ideology: IG Farben in the Nazi era*. Cambridge: Cambridge University Press. (Original work published 1987).
- Heinrichs, W. (1988). *Threshold of war: Franklin D. Roosevelt and American entry into World War II*. Oxford: Oxford University Press.
- Herbert, U. (1997). *Hitler's foreign workers: enforced foreign labor in Germany under the Third Reich*. Cambridge: Cambridge University Press.
- Hildebrand, K. (1971). Le programme de Hitler et sa réalisation, 1939-1942. *Revue d'histoire de la Deuxième Guerre mondiale*, 21(84), 7-36.
- Hitler, A. (1938). *Mein Kampf*. Munich: Zentralverlag der NSDAP. (Original work published 1925).
- Hitler, A. (1953). *Hitler's Secret Conversations: His Private Thoughts and Plans in his Own Words, 1941-1944* (H. R. Trevor-Roper Ed.). New York: Farrar, Straus and Young.
- Holtfrerich, C. (1986). *The German inflation, 1914-1923: causes and effects in international perspective*. Berlin: De Gruyter.
- Homze, E. (1976). *Arming the Luftwaffe: The Reich air ministry and the German aircraft industry, 1919-39*. Lincoln, Nebraska: University of Nebraska Press.
- Hubatsch, W. (1962). *Hitlers Weisungen für die Kriegführung 1939-1945: Dokumente des Oberkommandos der Wehrmacht*. Frankfurt am Main: Bernard & Graefe Verlag für Wehrwesen.
- Huber, D. R., & Fogel, E. M. (1920). Food Conditions and Agricultural Production. *The Annals of the American Academy of Political and Social Science*, 92(1), 131-136.
- International Military Tribunal (1949a). *Trial of the Major War Criminals before the International Military Tribunal* (Vol. 7). Nuremberg: Allied Control Authority for Germany.
- International Military Tribunal (1949b). *Trial of the Major War Criminals before the International Military Tribunal* (Vol. 38). Nuremberg: Allied Control Authority for Germany.
- Irving, D. (1977). *Hitler's war*. London: Hodder and Stoughton.
- Jäckel, E. (1981). Die deutsche Kriegserklärung an die Vereinigten Staaten von 1941. In F. J. Kroneck & T. Oppermann (Eds.), *Im Dienste Deutschlands und des Rechts: Festschrift für Wilhelm G. Grewe* (pp. 117-137). Baden: Nomos-Verlagsgesellschaft.
- Jäckel, E. (1984). *Hitler in history*. Hannover: Brandeis University Press.

- Jackson, J. (2004). *The fall of France: the Nazi invasion of 1940*. Oxford: Oxford University Press.
- Jacobsen, H. A. (1956). *Dokumente zu Vorgesichtes des Westfeldzuges*. Göttingen: Müsterschmidt.
- Jeffreys, K. (1991). *The Churchill Coalition and Wartime Politics, 1940-1945*. Manchester: Manchester University Press.
- Kaldor, N. (1945). The German War Economy. *The Review of Economic Studies*, 13(1), 33-52.
- Kehrig, M. (1974). *Stalingrad: Analyse und Dokumentation einer Schlacht*. Stuttgart: Deutsche Verlags-Anstalt.
- Kehrig, M. (1981). Vor 40 Jahren: Stalingrad. In H. A. Jacobsen, H.-G. Lemm, & R. Hauschild (Eds.), *Heere international: Militärpolitik, Strategie, Technologie, Wehrgeschichte* (pp. 178-192). Herford: Mittler.
- Kehrig, M. (1992). Die 6. Armee im Kessel von Stalingrad. In J. R. Förster (Ed.), *Stalingrad: Ereignis, Wirkung, Symbol* (pp. 76-110). München: Piper.
- Kershaw, I. (2000). *Hitler 1936-1945: Nemesis*. London: Allen Lane.
- Klein, B. H. (1959). *Germany's economic preparations for war*. Cambridge: Harvard University Press.
- Krivosheev, G. F. (1997). *Soviet casualties and combat losses in the twentieth century*. London, Pennsylvania: Greenhill Books.
- Kroener, B. R., Müller, R.-D., & Umbreit, H. (1988). *Das Deutsche Reich und der Zweite Weltkrieg: Organisation und Mobilisierung des deutschen Machtbereichs; Kriegsverwaltung, Wirtschaft und personelle Ressourcen 1939-1941* (Vol. 5/I). Stuttgart: Deutsche Verlags-Anstalt.
- Kroener, B. R., Müller, R.-D., & Umbreit, H. (1989). *Das Deutsche Reich und der Zweite Weltkrieg: Organisation und Mobilisierung des deutschen Machtbereichs: Kriegsverwaltung, Wirtschaft und personelle Ressourcen* (Vol. 5/II). Stuttgart: Deutsche Verlags-Anstalt.
- Länderrat des Amerikanischen Besatzungsgebiets (1949). *Statistisches Handbuch von Deutschland 1928-1944*. München: Ehrenwirth.
- Le Billon, P. (2005). *The geopolitics of resource wars: resource dependence, governance and violence*. London: Frank Cass.
- Leeds, A. (2019). Administrative Monsters: Yuri Yaremenko's Critique of the Late Soviet State. *History of Political Economy*, 51(1), 127-151.
- Lewis, C. (1941). *Nazi Europe and World Trade*. Washington: The Brookings Institute.
- Lindholm, R. W. (1947). German Finance in World War II. *The American Economic Review*, 37(1), 121-134.
- López-Muñoz, F., García-García, P., & Alamo, C. (2009). The pharmaceutical industry and the German national socialist regime: I.G. Farben and pharmacological research. *Journal of Clinical Pharmacy and Therapeutics*, 34(1), 67-77.
- Ludendorff, E. (1921). *The General staff and its problems*. London: Hutchinson & Co.
- Mason, T. (1975). Innere Krise und Angriffskrieg. In F. Fortmeier & H. E. Volkmann (Eds.), *Wirtschaft und Rüstung um Vorabend des Zweiten Weltkrieges* (pp. 158-188). Düsseldorf: Droste Verlag.
- Matloff, M. (1959). *Strategic planning for coalition warfare, 1943-1944*. Washington, D.C.: Office of the Chief of Military History, Dept. of the Army.

- Mearsheimer, J. J. (1983). *Conventional deterrence*. Ithaca: Cornell University Press.
- Mearsheimer, J. J. (2014). *The Tragedy of Great Power Politics* (2nd Edition). New York: Norton.
- Medlicott, W. N. (1952). *The Economic Blockade*. London: H. M. Stationery Office and Longmans, Green and Co.
- Michaelis, H., & Schraepfer, E. (1958). *Ursachen und Folgen vom deutschen Zusammenbruch 1918 und 1945 bis zur staatlichen Neuordnung Deutschlands in der Gegenwart: eine Urkunden- und Dokumentensammlung zur Zeitgeschichte* (Vol. 13). Berlin: Wendler.
- Michaelis, M. (1972). World Power Status or World Dominion? A Survey of the Literature on Hitler's Plan of World Dominion (1937-1970). *The Historical Journal*, 15(2), 331-360.
- Michalka, W. (1980). *Ribbentrop und die Deutsche Weltpolitik, 1933-1940: außenpolitische Konzeptionen und Entscheidungsprozesse im Dritten Reich*. München: Wilhelm Fink Verlag.
- Michalka, W. (1985). *Das Dritte Reich: Dokumente zur Innen- und Aussenpolitik. Weltmachtanspruch und nationaler Zusammenbruch 1939-1945*. (Vol. II). München: Deutscher Taschenbuch-Verlag.
- Michel, H. (1975). *The Second World War* (D. Parmée, Trans. Vol. 1). New York: Praeger.
- Milward, A. S. (1964). The End of the Blitzkrieg. *The Economic History Review*, 16(3), 499-518.
- Milward, A. S. (1965). *The German economy at war*. London: The Athlone Press.
- Milward, A. S. (1967). Could Sweden have stopped the Second World War? *Scandinavian Economic History Review*, 15(1-2), 127-138.
- Moltke, H. (1911). *Militärische Werke* (Vol. IV). Berlin: E.S. Mittler und Sohn.
- Montagnon, P. (1997). *Histoire de l'Armée française: des milices royales à l'armée de métier*. Paris: Pygmalion.
- Moritz, E. (1970). *Fall Barbarossa: Dokumente zur Vorbereitung der faschistischen Wehrmacht auf die Aggression gegen die Sowjetunion (1940/41)*. Berlin: Deutscher Militärverlag.
- Müller, R.-D. (1992). Was wir an Hunger ausstehen müssen, könnt Ihr Euch gar nicht denken": Eine Armee verhungert. In W. Wette & G. R. Ueberschär (Eds.), *Stalingrad: Mythos und Wirklichkeit einer Schlacht* (pp. 131-145). Frankfurt am Main: Fischer Taschenbuch Verlag.
- Murray, W. (1984). *The Change in the European Balance of Power, 1938-39: The Path to Ruin*. Princeton: Princeton University Press.
- Murray, W., & Millett, A. R. (2000). *A war to be won: fighting the Second World War*. Cambridge, MA: Belknap Press of Harvard University Press.
- Neurath, O. (1973). *Empiricism and sociology* (M. Neurath & R. S. Cohen Eds.). Dordrecht: Reidel.
- Oertel, M. (2015). Die Kriegsfinanzierung. In D. Eichholtz (Ed.), *Geschichte der deutschen Kriegswirtschaft 1939–1945* (3rd ed., Vol. 3, pp. 681-738). Berlin: De Gruyter. 3rd
- Office of United States Chief of Counsel for the Prosecution of Axis Criminality (1946). *Nazi Conspiracy and Aggression* (Vol. 7). Washington: United States Government Printing Office.
- Overy, R. J. (1975). The German pre-war aircraft production plans: November 1936-april 1939. *The English Historical Review*, 90(357), 778-797.
- Overy, R. J. (1978). From 'Uralbomber' to 'Amerikabomber': The Luftwaffe and strategic bombing. *Journal of Strategic Studies*, 1(2), 154-178.

- Overy, R. J. (1988a). "Blitzkriegswirtschaft"? Finanzpolitik, Lebensstandard und Arbeitseinsatz in Deutschland 1939-1942. *Vierteljahrshefte für Zeitgeschichte*, 36(3), 379-435.
- Overy, R. J. (1988b). Mobilization for Total War in Germany 1939-1941. *The English Historical Review*, 103(408), 613-639.
- Overy, R. J. (1989). Hitler's war plans. In R. Boyce & E. M. Robertson (Eds.), *Paths to War: New Essay on the Origins of the Second World War* (pp. 96-127). Basingstoke: Macmillan.
- Overy, R. J. (1995). *Why the Allies won*. London: Jonathan Cape.
- Overy, R. J. (2002). *War and Economy in the Third Reich*. Oxford: Clarendon Press.
- Overy, R. J. (2009). *1939: De zes dagen voor het uitbreken van de oorlog* (L. Pol, Trans.). Amsterdam: De Bezige Bij.
- Pape, A. (1996). *Bombing to win: air power and coercion in war*. Ithaca, NY: Cornell University Press.
- Pigou, A. C. (1921). *The political economy of war*. London: Macmillan.
- Posen, B. (1984). *The sources of military doctrine: France, Britain and Germany between the World Wars*. Ithaca, NY: Cornell University Press.
- Preparata, G. G. (2004). The Malthusian physiognomy of Nazi economics. *International Journal of Social Economics*, 31(11), 1014-1028.
- Rathenau, W. (1908). *Reflexionen*. Leipzig: S. Hirzel Verlag.
- Redmayne, K. C. B. (1923). *The British Coal Mining Industry during the War*. Oxford: Clarendon Press.
- Reichsministerium des Innern (1939). *Reichsgesetzblatt I*. Berlin: Reichsverlagsamt.
- Reichsministerium des Innern (1941). *Reichsgesetzblatt I*. Berlin: Reichsverlagsamt.
- Reinhardt, K. (1992). *Moscow: the turning point. The failure of Hitler's strategy in the winter of 1941-42*. Oxford: Berg.
- Reynolds, D. (1990). 1940: Fulcrum of the Twentieth Century? *International Affairs*, 66(2), 325-350.
- Rieter, H., & Schmolz, M. (1993). The ideas of German Ordoliberalism 1938-45: pointing the way to a new economic order. *The European Journal of the History of Economic Thought*, 1(1), 87-114.
- Robertson, E. M. (1989). German Mobilization Preparations and the Treaties between Germany and the Soviet Union of August and September 1939. In R. Boyce & E. M. Robertson (Eds.), *Paths to War: New Essays on the Origins of the Second World War* (pp. 330-366). Basingstoke: Macmillan.
- Rohde, H. (1971). *Das deutsche Wehrmachtstransportwesen im Zweiten Weltkrieg: Entstehung, Organisation, Aufgaben*. Stuttgart: Deutsche Verlags-Anstalt.
- Röpke, W. (1947). Repressed Inflation. *Kyklos*, 1(3), 242-253.
- Roskill, S. W. (1954). *The war at sea, 1939-1945: The Defensive* (Vol. 1). London: Her Majesty's Stationary Office.
- Rotundo, L. (1986). The creation of the Soviet Reserves and the 1941 Campaign. *Journal of military history*, 50(1), 21-28.

- Ruge, F. (1957). *Der Seekrieg: The German navy's story 1939-1945*. Annapolis, Maryland: United States Naval Institute.
- Salewski, M. (1970). *Die Deutsche Seekriegsleitung, 1935-1941* (Vol. 1). Frankfurt am Main: Bernard und Graefe Verlag.
- Scherbening, E. (1938). *Wirtschaftsorganisation im Kriege*. Jena: Fischer.
- Schmidt, P. (1951). *Hitler's interpreter*. London: Macmillan.
- Schwerin von Krosigk, L. (1974). *Staatsbankrott: die Geschichte der Finanzpolitik des Deutschen Reiches von 1920 bis 1945*. Göttingen: Musterschmidt.
- Seidler, F. W. (1986). *Fritz Todt: Baumeister des Dritten Reiches*. Munich: Siegfried Bubies Verlag.
- Spoerer, M. (1996a). *What New Estimates of Industrial Profitability Can Tell Us about the Weimar and the Nazi Economy*. Discussion paper. University of Hohenheim.
- Spoerer, M. (1996b). *Von Scheingewinn zum Rüstungsboom: die Eigenkapitalrentabilität der deutschen Industrieaktiengesellschaften, 1925-1941*. Stuttgart: F. Steiner.
- Spoerer, M. (2001). *Zwangsarbeit unter dem Hakenkreuz: ausländische Zivilarbeiter, Kriegsgefangene und Häftlinge im Deutschen Reich und im besetzten Europa, 1939-1945*. Stuttgart: Deutsche Verlags-Anstalt.
- Spoerer, M. (2015). Forced Labour in Nazi-occupied Europe. In M. Boldorf & T. Okazaki (Eds.), *Economies under occupation: the hegemony of Nazi Germany and imperial Japan in World War II* (pp. 73-85). London: Routledge.
- Spoerer, M. (2020). The Nazi War Economy, the Forced Labor System, and the Murder of Jewish and Non-Jewish Workers. In S. Gigliotti & H. Earl (Eds.), *A Companion to the Holocaust* (pp. 135-151). Chichester: John Wiley & Sons, Ltd.
- Spoerer, M., & Streb, J. (2013). *Neue deutsche Wirtschaftsgeschichte des 20. Jahrhunderts*. Munich: Oldenbourg.
- Statistisches Reichsamt (1940). *Statistisches Jahrbuch für das Deutsche Reich*. Retrieved from https://www.digizeitschriften.de/download/PPN514401303_1939/PPN514401303_1939___log43.pdf
- Stegemann, B. (1980). Hitlers Ziele im ersten Kriegsjahr 1939/40. *Militärgeschichtliche Zeitschrift*, 27(1), 93-106.
- Steiger, R. (1973). *Panzertaktik im Spiegel deutscher Kriegstagebücher 1939 bis 1941*. Freiburg: Rombach.
- Stern, W. M. (1960). Wehrwirtschaft: A German Contribution to Economics. *The Economic History Review*, 13(2), 270-281.
- Strasser, O. (1930). *Hitler et moi*. Paris: Grasset.
- Streit, C. (1990). The Fate of the Soviet Prisoners of War. In M. Berenbaum (Ed.), *A Mosaic of victims: Non-Jews persecuted and murdered by the Nazis* (pp. 142-149). New York: New York University Press.
- Svennilson, I. (1954). *Growth and stagnation in the European economy*. Geneva: Economic Commission for Europe.
- Taylor, A. J. P. (1961). *The origins of the Second World War*. London: Hamilton.
- Temin, P. (1989). *Lessons from the Great Depression*. Cambridge, MA: MIT Press.

- The National Archives of the UK (1940). *British Strategy in a certain Eventuality* (CAB 80/11/58). Retrieved from <https://discovery.nationalarchives.gov.uk/details/r/C9195411>
- Thies, J. (2012). *Hitler's plans for global domination: Nazi architecture and ultimate war aims* (I. Cooke & M. Friedrich, Trans.). New York: Berghahn Books. (Original work published 1976).
- Thomas, G. (1966). *Geschichte der deutschen Wehr-und Rüstungswirtschaft 1918-1945*. Boppard am Rhein: Harald Boldt Verlag.
- Tooze, A. (2003). Punktuelle Modernisierung: Die Akkumulation von Werkzeugmaschinen im „Dritten Reich. *Jahrbuch für Wirtschaftsgeschichte*, 44(1), 79-98.
- Tooze, A. (2006). *The wages of destruction: The making and breaking of the Nazi economy*. London: Lane.
- Trevor-Roper, H. R. (1953). *Hitler's table talk, 1941-1944*. London: Weidenfeld and Nicholson.
- Umbreit, H. (1979). Der Kampf um die Vormachtstellung in Westeuropa. In K. A. Maier (Ed.), *Das Deutsche Reich und der Zweiten Weltkrieg: Die Errichtung der Hegemonie auf dem europäischen Kontinent* (Vol. 2, pp. 233-327). Stuttgart: Deutsche Verlag-Anstalt
- United States Strategic Bombing Survey (1945). *The effects of strategic bombing on the German war economy*. Washington D.C.: The United States Strategic Bombing Survey, Overall Economic Effects Division.
- Waddington, L. L. (2007). The Anti-Komintern and Nazi Anti-Bolshevik Propaganda in the 1930s. *Journal of Contemporary History*, 42(4), 573-594.
- Wagner, B. C. (2000). *IG Auschwitz: Zwangsarbeit und Vernichtung von Häftlingen des Lagers Monowitz 1941-1945*. Berlin: De Gruyter.
- Walt, S. M. (2018). *The hell of good intentions: America's foreign policy elite and the decline of United States primacy*. New York: Farrar, Straus & Giroux.
- Wegner, B. (2000). The War against the Soviet-Union 1942-1943 (E. Osers, B. John, C. Patricia, & W. Louise, Trans.). In H. Boog, W. Rahn, R. Stumpf, & B. Wegner (Eds.), *The global war: widening of the conflict into a World War and the shift of the initiative*. Oxford: Clarendon Press.
- Weinberg, G. L. (1980). *The foreign policy of Hitler's Germany: Starting World War II, 1937-1939* (Vol. 2). Chicago: University of Chicago Press.
- Weinberg, G. L. (1981). *World in the Balance: behind the scenes of World War II*. Lebanon, New Hampshire: New England University Press.
- Weinberg, G. L. (1994). *A world at arms: a global history of World War II*. Cambridge: Cambridge University Press.
- Weizsäcker, E. (1996). *Die Weizsäcker-Papiere 1933 - 1950* (L. E. Hill Ed.). Berlin: Propyläen Verlag.
- White, L. H. (2012). *The clash of economic ideas : the great policy debates and experiments of the last hundred years*. New York: Cambridge University Press.
- Wiedenfeld, K. (1936). *Die Organisation der Kriegsrohstoffbewirtschaftung im Weltkriege*. Hamburg: Hanseatische Verlagsanstalt.
- Yergin, D. (1991). *The prize: the epic quest for oil, money, and power*. New York: Simon & Schuster.
- Yueh, L. (2013). *China's growth: the making of an economic superpower*. New York: Oxford University Press.

Zetterling, N. (2017). *Blitzkrieg: From the Ground Up*. Havertown: Casemate.

Zipfel, F. (1972). Hitlers Konzept einer Neuordnung Europas. In D. Kurze (Ed.), *Aus Theorie und Praxis der Gesichtswissenschaft* (pp. 154-174). Berlin: De Gruyter.