

ZBIGNIEW KLIMIUK

ECONOMIC MOBILIZATION IN GERMANY PRIOR TO AND DURING WORLD WAR II

ABSTRACT

The task of this research paper is to present evidence of the economic mobilization observed in Germany under the Nazi rule, prior to and during World War II. In addition to the presentation of the German efforts at the mobilization of the economy towards waging a war, I would like to comment on the validity of the 'Blitzkrieg economy,' theory as I adduce the evidence, which contradicts such a theory by revealing comprehensive and costly industrial and military expansion programs undertaken by Germany both prior to the war and during its course the Labor and capital investment in the German war effort are discussed in detail in order to identify the structural problems that existed in the German economy.

From the presented evidence, it can be concluded that the Third Reich's leadership could not agree on the policies which were indispensable to utilizing the nation's economic capacity in such a way as to maximize the effectiveness of modern industrial military conflict.

The assertion that the lack of uniform and effective economic policy was the only reason for Germany's ultimate defeat would be oversimplification, as the question of scarcity of resources (natural resources, manpower, machinery and factory space) had also an important impact on the outcome of hostilities. However it can be argued that problems with shortages observed as the war started to wear the industrial base of Germany can be – at least to a certain extent – attributed to the mistakes of the economic policy, many of which had its roots in intense personal and political rivalry between individual decision

makers and governmental agencies, industrialist in the context of poorly delineated prerogatives and responsibilities.

The Loser of This War Will Be the Side That Makes the Greatest Blunders.
Adolf Hitler

1. NSDAP's ASCENT TO POWER – CONTEXT AND REASONS

From the final battles of World War I there emerged a vision of modern industrial warfare. Warfare in which the final victory was bound to be claimed by that contestant who would be the most successful in employing the combined capacities of industry, labor and the military might. „Total war”, as it became known, boiled down to a „winning” formula in which the nations war potential consisted of such factors as the willingness to enter into military campaign, economic potential of the belligerent as well as administrative and management capabilities of people, who stood at the helm of the state in employing all the above-mentioned factors towards the attainment of the final victory.

War of such dimension required that leaders were highly educated and familiar with or even expert in economics, having extensive knowledge of the production methods and engineering as well as of military strategy which could be instrumental in effective application of economic resources economy towards massive production required to lead and win the war. Since the third Reich chose the path of an all-out-ranging conflict with the most developed industrial powers, the question of maximizing the economy's output gained paramount importance and with it the question of the nation leaders' ability to harness the economy to do so.

Global economic situation and particularly economic situation in Germany itself are very important factors that lead to the NSDAP's seizure of power and its subsequent policy. The World Economic Crisis begun in Europe around 1928 (that is at least a year earlier than in the US.) resulting in rapid loss of jobs, sizeable reductions in trade and industrial output. The economic decline could've been an inherent outcome of the normal developments within business cycle; however the political circles in many countries (e.g. the US, Great Britain and Germany) attributed the economic problems – at least partially – to foreign competition. The international environment in the aftermath of WWI, one characterized by strong presence of isolationists tendencies and mutual distrust among nations, was conducive to fostering and dee-

pening such dangerous notions and illusions. By 1931 most industrial nations had enacted import quotas, taxes or restrictions of some type purposefully aimed at protecting domestic employment in hopes of curtailing the recessions' magnitude. Such measures brought about a rapid decline in world trade.

Germany, with 25% of work force directly involved in export related production was one of the nations dependant on foreign trade. It imported raw materials and exported finished goods, therefore the trade barriers, erected after 1929, brought about a 50% reduction in German exports, which in turn translated into the number of unemployed workers reaching 9 millions in 1932. The volume of German industrial production shrunk to a level recorded as late as 1890s. Such an economic climate combined with the widespread public disapproval of the Treaty of Versailles, perceived in Germany as an outright humiliation, created perfect breeding ground for the revisionist ideologies and politicians agitating for economic autarky and the rebirth of German power

Though Hitler is credited with transforming Germany's position in Europe within a matter of years, I would like to recall that in the aftermath of World War I almost every German citizen was disillusioned enough to harbor revisionists and nationalistic sentiments. Therefore early foreign policy measures of the Nazi government seemed to fit the ambitions of German nationalists and suppressed military circles. The outcome of WWI, despite territorial and population loses of as well as reduced raw materials base, did not deprive Germany of the industrial capacity to be the greatest European power. The Nazi authorities had major popular support and full discretion in terms of controlling and utilizing national economic resources. Country's political culture leaned towards war and conquest and its economy was distorted to such an extent that by 1938 52% of government expenditure and 17% of GNP were earmarked for armaments. In 1938 Germany's expenditures on weapons were higher than the combined effort of Britain, France and the U.S. One of the examples of the tenacity of preparations for war is the fact that as of the beginning of 1933 German military forces were legally constrained to 100.000 men and the aircraft production in 1932 stood at the negligible number of 36 planes, before growing to 1938 planes in 1934 and astonishing 5112 in 1936.

Obtaining power in 1933 leaders of the NSDAP well acutely aware of the significance of increasing employment and they knew that to pursue ambitious and demanding long-term political and economic goals, they couldn't risk popular unrest resulting from poor nourishment and lack of job opportu-

nities. Hence, as the first step in their economic campaign Nazi authorities focused on job creation. Job creations programs were implemented – to certain extent resembling the solutions applied in the United States (such as the Civilian Conservation Corps) and German authorities funded so-called ‘Arbeitsbeschaffung’.

Production efficiency was sacrificed for the sake of high labor intensity, as the overriding objective was to create maximum number of job openings. Extensive road-building project (Reichautobahnen) was purposefully based on application of manual labor, even though there was sufficient machinery to perform majority of work in more efficient manner. Other labor intensive and unemployment reducing projects encompassed renewal of railroad network, improvement and mending of road, reclamation of land and construction of bridges. The results of those ambitious programs and plans was the renewal of Germany’s economic and strategic infrastructure, coupled with the eradication of chronic and acute unemployment. This short-term program focused on creating work opportunities brought immediate results as early as in 1934-35 leading to virtual eradication of labor related tensions in the country and consolidation of the NSDAP’s hold on power. Since the job creation programs proved a success, the Nazi rulers were free to exploit both the economy and the Germany’s population. However it has to be underlined here that the necessary and successful attempts and solving unemployment problems, though instrumental to the acceleration of the pace of economic recovery, had – in terms of long-term impact – had instigated an array of structural problems that were to beset the German economy later on, and to have detrimental impact on the volume of output.

However even the „statistical success” of the Third Reich’s economy in reducing unemployment have to be look upon with a magnifying glass. Officially, unemployment was reduced from about 6 million in 1933 to around 1 million in January of 1938, before disappearing altogether in 1939 (mere 302 thousands).

To counter such optimistic official propaganda of the Nazi Government, I would like to quote Dan Silverman, who in his work „Hitler’s Economy” (published first in 1998) reveals that unemployment was reduced from about 6 million people, in January 1933, 2.5 million people, in January 1936. Therefore we can speak of sizeable reduction of unemployment but not of the German economy attaining full employment – as the unemployment rate declined from 34% in 1933 to 14% in 1936. The credibility of the official statistics is doubtful for many reasons. First off all, they did not include Communists, Socialists, Jews and pacifists who have lost their jobs and were

cut off from relief. Secondly at least a million people have been called into the army, the labor-service camps, the Nazi organizations or various partly-paid forms of public works.

On the other hand jobs were created. For example public work schemes for men were introduced, by employing them in the Reichsarbeitsdienst (National Labor Service). Their work would have included digging ditches on farms to assist irrigation, building the new autobahns, planting new forests etc. and such „employees” were clad in a military style uniforms, resided in camps located close to the working and toiled for a meager allowance. However even these underpaid workers must have believed that the government at least tried to improve their situation, and must have felt more or less loyal to its policies.

The German Labor Front was set up replacing the role of trade unions which had been banned. It protected workers to a certain extent by decreeing that they couldn't be fired on the spot. On the other hand, workers required government permission to leave current job, and the only way to change one's place of work was through labor exchanges controlled by the government. The working time was elongated from 60 to 72 per week (overtime included) by 1939 and strikes had were forbidden.

One train of thought is that it were rearmament spending that were the power engine of the Germany's economic recovery. However spending on armaments was mere 10% of government spending in 1933, before being gradually stepped up to 25% in 1935. By the fiscal year 1935-36 the majority of increases in GDP, reduction in unemployment, and other such indicators that would happen prior to the war had occurred. According to numerous analytical works the largest contributors to the economic growth – during the period discussed in this paragraph – were expenditures on motor vehicles, transportation infrastructure, and construction. The policy of the Nazi government in these fields aimed at creating links between increases in government investment with increased private investment. Maximization of investment and of employment growth were considered the most important task of the economic policy.

The question arises how did the government finance such ambitious undertaking, and the answer to such a question is painfully straightforward one. From the fiscal year 1933-34 to the fiscal year 35-36, government expenditure exceeded government income by about 50%. Budgetary deficits were observed since at least fiscal year 1928-29, so they were not a feature instilled by the Nazi government, as the latter actually continued a deficit spending trend that had existed before it came to power.

German government did not follow Keynesian economic policies, though the policies implemented had a stimulating effect on the economy as whole. Authorities didn't aim at stimulating consumer demand through an increase in public expenditures. Actually they made a lot of efforts to prevent an increase in consumer demand, while focusing on effecting increases in investments and savings. This may be one of the reasons why the „multiplier” effect they obtain (the Reichsmarks of total economic activity generated by one Reichsmark of government spending) reached 1.5, and was lower than in the case of western countries pursuing „textbook version” of Keynesian stimulation policies (typically at least 2.5). Therefore it has to be concluded here that, the actual economic benefit of governmental spending was rather less than what modern governments, who engage in similar activities from time to time, obtain.

In fact, the Nazis were not interested in smoothing the vagaries of a free market, but they were bound on implementing strict controls on the economy, so that by the beginning of the war financial institutions were to be effectively reduced to the position of the stockholders of the government. Companies were enticed to cooperate with Nazi policies by being given favorable deals. The government assumed a role over the economy that was primarily supervisory, rather than executive, in nature. The Nazis mostly trusted the large corporations to run things for themselves, while intervening from time to time to ensure compliance with the government's goals of the state, instead of assuming direct control over all of the operations of industry.

The situation in the latter respect changed to a degree around 1936 with the commencement of explicit planning for the war effort. Government expenditures increased dramatically, without matching growth in the budgetary revenues. By the fiscal year 1938-39, that is the last fiscal year before the outbreak of WWII, expenditures exceeded revenue by the outrageous 86%! and total debt load exceeded annual revenue by 136%. Government spending reached 33.5% of GNP compared to 19% in 1933. Total production exceeded the level observed in 1928 by 25% (and was about two times higher than in at the height of the depression in 1932), almost entirely on account of higher production of capital goods (infrastructure, heavy industry, etc.) rather than consumer goods. The interest of the totalitarian government was to amass the power of the state, not to create and nourish a wealthy consumer economy or to promote trade. Even though in the „technical sense” Germany under Hitler was a capitalist economy, it was an entirely isolated one with tremendous levels of government involvement. Authorities never intended to make this economy capable of engaging in the long-term competition economic

with the western free market countries. Therefore it is not surprising that German economy wasn't capable of successfully entering a peaceful competition. And in a matter of years its ability to compete as a war economy was to be tested as the authorities decided to enter on the collision course with the circle of major industrial powers.

In 1936 rearmament spending doubled from what it was in the previous year, exceeding ahead of the total for both transportation and construction expenditures for the first time. There was also a modification of its character. In the early years of the Nazi government armaments spending had involved to a large extent included large expenditures on research and development, as well as on capital investment. However in 1936 rearmament effort was transformed towards one primarily focused on the production and maintenance of actual military equipment. Such shift was definitely less conducive to the economy as a whole. By the fiscal year 1938-39, 46% of German government expenditures were earmarked for rearmament, leading to substantial debt burden. The resultant debt was financed by predominantly by internal borrowing rather than foreign borrowing. The Nazi government had structured its trade agreements in such a way as to restrict to the import of critical goods, paid for primarily by bilateral barter agreements. The policy of the government aimed at isolating the German economy from the rest of the world, and to allow trading only when there was no other way of obtaining required resources and goods.

Such levels of internal borrowing, as the ones mentioned above, are not sustainable for long without a financial collapse of some kind. External borrowing could not be increased to cover for it, since no nation would loan Nazi Germany that much money at a continued rate (as – even if political motives were not taken into account – to do so would constitute an enormous credit risk. Therefore the substantial absolute drop in government spending including and especially armaments was necessary, unless of course authorities decided to resort to war. Armaments, at such a high level of total expenditure, are the easiest place to cut large amounts of spending. Since the armaments spending were of such a magnitude as they were in Nazi Germany prior to WWII, if the deficit were to be eliminated without reducing armament spending, non-armament spending would essentially have to be eliminated altogether!. Certain analysts calculate that in order to maintain the stability of the German economy and government, non-military spending would likely have to remain at 50-66% 1939 levels of expenditure. This means that to reinstate a balanced or nearly balanced budget, rearmament spending would have to be cut down to 33-50% of the levels observed in 1939.

Taking into account the fact that the initial drive towards „full employment” was based on labor intensive techniques it is not that all surprising that productivity in Germany between 1929 and 1938 recorded quite modest rate of growth, one amounting to 1.3% per year. These rates of productivity growth were significantly lower (approximately by half) than ones observed in the same period in Great Britain. The primary effect of the Nazi policies was to recover from the substantial collapse of the German economy early in the Great Depression, not to stimulate unusual amounts of fundamentally new capacity. The German economy actually had a lot of structural problems, including the fact that many plants had invested heavily prior to 1929 and so later increased their capacity by putting old equipment back into use.

In addition to the above-mentioned facts it has to be noted that German industry wasn't very agile in adapting many modern production methods. Thus it may be seen that the „miraculous” Nazi recovery was not in fact miraculous in terms of what modern economic policies. The recovery can be depicted as a clumsy and inefficient one, from the perspective of potential outcomes of applying counter-cyclical economic policies in the present. The recovery itself, was to large extent a statistical phenomenon as it reflected not only economic policies but also the fact that the German economy had shrunk to such artificially low levels during the Depression. In other words the economic growth observed in Germany during the period was not as impressive as it could be inferred from a cursory analysis of main macroeconomic indicators.

The systemic problems with the efficiency of the German economy, inefficiency in industrial, the problems stemming from existing old infrastructure, were very profound ones. When compared to that of other major industrial economies, the potential of the German economy for overall new growth was not favorable. And we must underline that the German economy had been almost completely isolated from the world economy by governmental restrictions on trade, and it is evident that such restrictions per se were not beneficial to medium to long term growth. But the truth is that removing these restrictions could create significant problems for the increasingly government-controlled economy, an economy unexposed to any significant pressure of international competition.

The conclusion can be form that, regardless of the potential reduction in the levels of deficit spending, Germany would stand a poor chance to compete in international trade, and would likely be outgrown by their major economic competitors. In the short term, German economy's prospect for outgrowing even the economy of the USSR, were quite problematic, as the latter

had experienced substantial levels of industrial growth in the period when the rest of the world was struggling with the painful realities of the Great Depression.

2. THE FOUR YEAR PLAN

By 1936 the recovery of the German economy had motivated Hitler to have an ambitious plan of rearmament and capital investment being prepared. This ambitious undertaking was called the Four Year Plan and had various objectives ranging from expansion of the production of weapons production in the short run, through self-sufficiency in key economic sectors, and restructuring the economy to allow it to achieve further increases in weapons production by the virtue of application of the mass production methods as a long-term objective.

Proponents of the „blitzkrieg” theory (such historians as Alan S. Milward, B. H. Klein and Nicholas Kaldor) seemed not to discern the massive investment Germany made to increase future output. The theory of blitzkrieg economy accentuated Germany’s intent to wage a war in such a way as to minimize the burdens placed on the economy and on civilian population. The proponents of the said theory asserted that Germany’s had armed large numbers of troops in order to prepare them for immediate combat, but wasn’t successful in preparing the economy and industry to support waging a prolonged war effort. The proponents of this theoretical approach resort to supporting it with data taken from the period starting from 1940, overlooking the fact that by then Germany was well advanced in the process of honing its economic foundations for war effort. To disprove the „blitzkrieg theory” we could underline that as early as in 1935 Fuhrer – even before the Four Year Plan had been commenced – approved the 1935 Reich Defense Law, which was bend on and ordered the „preparation of all economic forces for war”. The objectives of the authorities are further accented by the Hermann Goering’s proclamation in 1936 that, „The Four Year Plan has the task of preparing the German economy for total war”.

The objectives of the authorities are further accented by the Hermann Goering’s proclamation in 1936 that, „The Four Year Plan has the task of preparing the German economy for total war”. The Plan envisioned a five-fold increase in the Luftwaffe’s front-line strength and a 40% increase in the production of heavy machinery. 70% of all capital resources available from 1936 to 1939 was used to pursue to objectives of the Plan. If the German

authorities intended to base their war effort on the idea of the ‘Blitzkrieg warfare’ one must ask if they would have required the complete reordering of the German economy.

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Restructuring the German economy aimed at increasing future economic output had not come without a price, which encompassed the consumption of scarce raw materials, the diversion of labor and the opportunity cost of production if said resources could have brought about if invested in other sectors of the economy. The German authorities decided to earmark extensive scarce resources and national income under the guise of increasing future production. A comparison of gross national product (GNP) and per capita income of Germany and her would be opponents on the brink of war prior may be useful in explaining the rationale used to justify such appropriations.

Table 1. 1938 GNP and Per Capita Income

NATION	TOTAL GNP*	PER CAPITA*
U.S.	96.5	2,093
BRITAIN	29.2	1,429
GERMANY	35.2	1,105

*Note: Data presented in International Units to prevent currency error.

Source: Klaus K o r r, *The War Potential of Nations*, Princeton: Princeton University Press 1956, p. 228.

GNP and per capita income are very important in international comparisons as they can serve as a proxy for measuring the economic capacity of a nation’s war economy in a two fold manner. First of all per capita figures serve as an effective indicator of productivity and reveal the efficiency of the utilization of economic resources. In addition to that, GNP data show the nation’s wealth and can be instrumental in measuring the degree of the populations’ ability to withstand the deterioration in living standards. One of the characteristic features of the War economy is the diversion of economic resources and of nation’s wealth, by taking in from population and subjecting to the governmental control. The wealthier the nation is – as measured by its GNP and GNP per capita, the greater is its ability to support such transfer of resources. On the basis of the data presented in the table above we can

infer that the German economy was inefficient in terms of production. The data in the above table shows Germany to be an inefficient producer, compared to Great Britain and the U.S. On the basis of the same table it can be inferred that Germany, due to its smaller income could not withstand – as of 1938 – to much in terms of the additional transfer of resources from the population to the government. It has to be underlined here that certain historians erred by trying to prove that German authorities did not try to reduce civilian consumption by quoting data from 1940 onward, and overlooking the obvious fact that much in the way of the „transfer” discussed above had been done before 1939. We cannot accept such a line of reasoning, as there is an ample data which shows how Germany effected the mobilization of its economic resources towards undertaking of a war effort.

Table 2. German Consumption/Production

CATEGORY	YEARS	% INCREASE/DECREASE
Private Consumption as % of GNP	1928-1938	Decline 71% to 59%
Consumer Goods Output	1938-1941	Decline 22%
Per Capita Consumption	1939-1940	Decline 13%
Investment in Capital Industry	1929-1939	Increase 172%
Investment in Consumer Industry	1929-1939	Decline 15%

Source: Nicholas Kaldor, *The German War Economy*, Manchester: Norbury, Lockwood, 1946, p. 25; R. J. Overly, *War and the Economy in the Third Reich*, Oxford: Clarendon Press 1994, p. 261-281.

The Role of Labor

Of all the various explanations of the deficiencies in the German economic performance, I would like to turn now to the question of the structural foundations of industrial production as the key explanatory factor. It well evident that Germany had the status of a highly industrialized nation, and one employing labor-intensive production methods. Discussion of the labor's importance for the German economy under the Nazi rule cannot be however confined to the issue of the reemployment effort depicted above. Certain analysts referred to the typical or average German company of that time by invoking the term „cottage industry”, and such an approach is quite well justified as the majority of firms in Germany was run by families and had small labor force, which consisted of highly skilled employees, whom we can describe

in the present parlance by the term „craftsman”. On the other hand there were industrial sectors – such as steel and chemical industries – which were particularly instrumental from the perspective of the introduction of the methods of mass production, however such advances can be regarded more as an exception than the rule of conduct permeating entire German industry. Such modern solutions, as moving assembly lines (commonly employed in the U.S. and other advanced nations at the same time), were rare phenomenon in the German economy. There is certain evidence that labor saving technologies were looked upon with frown by the government, as they posed a threat to the reemployment effort, whose success was instrumental in consolidating power base of the ruling party and in allowing the rulers to stir popular sentiment toward future war effort.

One group of scientists perceived German pre-war economy's export of high quality machine tools as an indication of the efficient production, which could give this country leverage in the war time. Such export figures could attest to the Germany's advantage in the efficiency of production, however such an analysis has to take into account the specific categories of machine tools. In other words, it is important to observe that Germany's production, utilization and exports of machine tools focused on so called general-purpose machinery. Such an equipment was scheduled to be used by skilled workers in the process of batch production but were not appropriate from the perspective of mass production methods. The problem had been exacerbated by the fact, that German military establishment looked favorably upon such small, inefficient firms whose skilled craftsman could quickly adjust to the numerous design changes and technical modifications to weapons demanded of them. Such policy could disastrously complicate the manufacture of even the simplest items. For example, in order to build a single Ju-88 bomber initially 4,000 various nuts, bolts and screws were required, later in the war the number was reduced by twenty times to about 200. The economic revival which surfaced in the mid-1930's brought about unexpected consequences for labor force. Even if we doubt the success of full employment policy, as it has been already explained, we are even more astounded that with the passage of time and prolongation of war the earlier crisis of unemployment, which helped Hitler's party to come into power, had become replaced with chronic labor shortages, which proved difficult to eliminate. Of course the shortages were more of a qualitative (finding skilled specialists) nature than of the quantitative one, since the slave labor from the conquered countries was available, though gradually improving treatment of foreign „involuntary” workers is indicative of problems encountered with the available supply of

labor. Initial ideological objection against mobilization of the female population and in spite of the above-mentioned extensive use of foreign labor, the problem persisted. Initially the Nazi party tried to limit female employment – as the main objective was to assure sufficient number of jobs to millions of unemployed males, However around 1938 situation has changed significantly and government's institution of programs aimed at promoting female employment attested to this shift in government's reasoning.

Klein and Kaldor also incorrectly discounted female involvement in farming. Germany prior to the war was a net importer of foodstuffs and efforts undertaken to increase farm output were crucial to her war effort. Overall, Germany used a much higher percentage of women in the work force than any of the allies, including over 36% of married women, as seen below.

Table 3. Women in the Labor Force 1939-1944

NATION/YEAR	GERMANY	BRITAIN	UNITED STATES
1939	37.3%	26.4%	N/A
1940	41.4%	29.8%	25.8%
1941	42.6%	33.2%	26.6%
1942	46.0	36.1%	28.8%
1943	48.8%	37.7%	34.2%
1944	51.0%	37.9%	35.7%

Source: R. J. O v e r y, *War and the Economy in the Third Reich*, p. 305.

If a total war effort demands the maximum use of labor resources, certainly the German usage of female labor identifies a total war effort much more so than allied efforts.

As German unemployment reached record lows and indigenous sources of labor reached their peak the Nazi regime turned to imported labor which totaled nearly one-half million in March 1939 and by war's end totaled over two million.

Against the backdrop of an economy operating at full employment was the ever-expanding German military machine, whose needs for manpower and resources were insatiable. In one of her greatest failures, Germany mismanaged her labor resources by failing to protect skilled craftsmen and highly trained workers who made the industrial economy operate. Despite the use of protective categories designated „S” or „SS” to identify workers critical

to war production, the military drafted workers indiscriminately into uniformed service. Simultaneously, Goering had begun a program to retrain workers from non-essential industries to increase war output, particularly for use in the aviation industry. The flawed logic of drafting skilled craftsman and substituting retrained 'volunteers' should have been obvious; however, it was not to the German high command. For example, the Luftwaffe failed to streamline production methods to rapidly increase output in response to the huge combat losses suffered between 1939-1941, causing front-line strength to fall over 35% in just two years. Efficient mass production with dramatically increased output was introduced, but not until 1943-1944 under Albert Speer, arguably too late to prevent the demise of the Luftwaffe.

Here we again return to the issue of poor delineation of competencies and responsibilities, and from follows below it should be plainly visible how the intricacies of the political process played against the full mobilization of economic resources and therefore precipitated the downfall of the Nazi State.

The Role of Capital Investment

Similarly to the economic growth of the late 1930's, the Four Year Plan program of capital investment had an unintended consequences for the availability of labor supply. Economic plans of the Nazi government resulted in the economy's being directed in two divergent and competing directions. One was these directions implied immediate production of arms while the other one was to forgo potential increase in current production for the greater future production gains. Numerous attempts were made at assuring self-sufficiency of the German economy and substituting imported supplies with domestically made ones. The Four Year Plan was responsible for giving raise to two problems that were never solved by the Nazi rulers. First, of all a sizeable part of the investment in new factory floor and equipment was redundant and not economically justified as industry in general was far from maximum utilization of the existing production capacity. The representatives of industry often objected to such suboptimal investment projects, as it was the case when plans for the Reichswerke steel plants in the Ruhr were unveiled in 1939, with industrialists claiming that better investment would be best to update existing plants and equipment. Industrialist had calculated at that time that the construction of the vast new facilities would have an opportunity cost equal to three years' worth of steel production, and it was evident that such production was crucial to current arms production. Such problems as the one described stemmed not only from the planning failures, but also – if not most

of all – from the strained relationship between corporations and the governmental agencies, with part of the blame going to Hitler's inability to comprehend the scope of resources being devoted to industrial development and the time required to commence production in the newly built factories. To further exacerbate the problem of new capital investment, few existing German factories operated with more than a single shift per day, with the average work week equal to about fifty hours per week, with the consequential idleness of the sizeable portion of plant and equipment lasting for two-thirds of the war. Successes achieved by Albert Speer in 1943-44 in halting unreasonable construction projects were only partial though he strove and sometimes managed to divert the served resources thus saved into existing facilities to improve output. If we recall that the size of the German economy was about one-third of that of the the United States; therefore, the necessity to operate at full capacity becomes evident.

The Four Year Plan of capital investment was designed around the notion of self-sufficiency to be achieved at any price. However such an approach led to the surfacing of second key problem, as the plan to maximize use of raw materials from domestic sources, such as low-grade German iron ore, had again brought about unintended economic consequences. Generally speaking, a large part of industry steered towards low high cost production, leading to almost two-fold increase in the cost of steel produced from domestically resources. Though the logic of planning for war effort justified this type of self-sufficiency in case of certain industries, in others it had done nothing but lifted production costs and reduced efficiency. The increase in production costs created a wedge between the sector of private enterprises and the Nazi regime, as industry leaders considered non-conflict based scenarios which would allow exports to regain the role of an employment stimulus and economy's power engine. Growing production costs had also an adverse impact on the military as contracts to purchase arms were based on cost plus a fixed profits, which led to army obtaining less output for the same amount of money. The authorities failed to grasp the detrimental effect of cost plus fixed profit contracts to the war economy. To illustrate, an inefficient producer with costs of RM 100 would make a fixed three-percent, or RM 3. If the firm increased efficiency and halved costs, profits fell 50%. Firms had no incentive to improve output or contain costs.

Heavy capital investment and construction involved opportunity costs that Hitler failed to comprehend. The Speer ministry put the number of men involved in unnecessary construction projects, valued at RM 11B, at 1.8 million, which could be diverted to other productive tasks. Capital investment

also utilized large quantities of construction material and scarce imported items. Vast sums of foreign exchange were blindly consumed in order to purchase the specialized materials for the construction of new production facilities.

The Role of Private Industry

Germany under Nazi rule cannot be described either as command economy or a market one. The military and political circles greatly interfered in the economy's operations, however the companies and industries had an opportunity to pursue their best interests. The problem is that the notion of best interest cannot be interpreted only in technically economic way. For example large, historically efficient factories in the Ruhr became dependent – when it came to renew and update equipment – on the decisions of political circles. Goering-led Reichswerke was strong enough to avoid competition for funds with other steel producers, who tried to overcome factory productivity losses caused by dilapidated state of the factory equipment. In such circumstances even the output from Germany's most efficient private steel producers had to decline even before the allied strategic bombing efforts has taken its toll.

Table 4. Ruhr Area Steel Output

YEAR	1938	1939	1940	1941	1942
M/TONS	16.0	16.2	13.7	13.6	13.0

Source: R. J. O v e r y, *War and the Economy in the Third Reich*, p. 113.

However part of the blame rested with the companies as inefficient use of scarce raw materials wasn't a rare phenomenon, with numerous firms hoarding raw materials not necessary from the perspective of their production process as other companies or industrial sectors faced critical shortages of such materials. The governments lack of oversight was also a serious failure. In many ways private industry followed a 'business as usual' approach to war production, and such an approach was readily accepted by the military. Never engaged in the processes of mass production, firms had personnel and expertise more befitting production of low volume, highly detailed and technically complex military equipment. The design changes were readily embraced by the military and industrial sector, as were revised specifications , new models. Scientific effort was profoundly misdirected as the research excessively focu-

sed not on not follow-on systems or replacements of current models, but on the creation of „fantastic” weapons of the Wunderwaffe kind.

Contrary to British and American air forces, that in the course of war made significant advancement towards next generation of aircraft, German Luftwaffe operated – even though very advanced – by nevertheless modifications of the same models. One of the explanations may rest in the fact that vast financial, labor and scientific resources were tied in the elaboration and production of weapons such as the V1 and V2. Hitler had a nature of an innovator as he seemed to prefer scientific breakthroughs and would demand production of a specific weapon to be started even before the project was completed. Unfortunately industry was complacent in trying to fulfill the wishes of the Fuhrer, which took place with the detriment to more logical production schemes.

According to the US Strategic Bombing Survey the opportunity cost of the V1 and V2 programs in the last year and a half of the war was equivalent to of 24,000 front-line aircraft.

Another example of inefficiency of the German industry is the fact that in the year 1940 Germany’s spending on weapons procurement amounted to \$6B, compared to \$3.5B spent by Great Britain. It might be somewhat puzzling to find that the latter country produced 50% more planes, twice as much vehicles and almost equal number of tanks as Germany did. Even more detrimental to the war economy was the fact though Germany did not abound in raw materials it wasn’t free from the wasteful raw materials practices. One of the examples of such practices can be found in the aviation sector. Even though in 1941 Milch managed to convince the aviation industry to reduce wastage by recycling scrap metal, one year later Speer estimated the wastage of aluminum at Luftwaffe plants to exceed 700 kg per engine.

While one group of private companies in the industrial had to cope with the difficult situation, several others (as for example IG Farben in chemicals and Krupps in armaments production) were expert at using political process to gain production advantage or control of industrial concerns, both in Germany and in occupied countries. Political protectors allowed such companies to be less concerned with quantity or quality of production – as it was especially evident in the case of the aircraft industry, where not later than in 1935 Milch wanted to discontinue the production of obsolete aircraft; but had his efforts thwarted by political links between corporate and governmental circles.

The Role of State-Run Nazi Enterprise

Growing differences between the industrial sector in general on one hand and the political leadership led to the rise of state-run industry. As of the end of the war, the state industrial complex led by Goering engulfed more than 500 firms operating in nearly all aspects of the industry and production. Goering quickly put into life the idea of vertical and horizontal integration by nationalizing existing firms or creating entirely new enterprises. The political clout of Goering and his industrial conglomerate contributed to the undermining of private enterprises, as Goering would either expand his sphere of influence into occupied countries and place their industrial facilities under „his” Reichswerke, without regard for German ownership, or had all skilled or semi – skilled workers sent to work in German facilities. Such a policy deprived the German companies of the motivation to or reduced their interest in investing in and maintaining facilities outside the borders of the Germany proper. This casual relationship gives as at least partial explanation to the problem why Germany utilized so little productive capacity in the territories under its occupation. Additionally, the firms absorbed by the Reichswerke were often suppliers to German firms in the framework of the vertical integration schemes promoted by Goering. Once taken over, the raw materials were shipped to Reichswerke plants, and it had created problem for the private German firms as they either had to compete for the raw materials controlled by such plants or – in the worst case were deprived of access to these materials.

German authorities tried to implement a program, that would allow private companies to oversee or manage plants and companies in occupied territories. Theoretically such relationships between companies would constitute a joint venture between the state and the private firm, with the latter acting in the capacity of a trustee or a guardian as long as war continued. Actually, the Nazi rulers lacked interest in the post-war economics and the companies failed to consider the needs of a warring nation. Since the state would not allow for purchase or guarantee ownership following the war, few resources were devoted to proper oversight. The private firms, already saddled with lower profits had no incentive to invest capital into the facilities or waste precious management resources to ensure their success. Often facilities were simply stripped of capital equipment and then closed. This rationale, coupled with the continued drive to ship skilled labor to Germany, further explains why occupied territory plants failed to substantially increase German economic output.

War of Depth or Breadth?

Milward, Klein and Kaldor, asserted that the German economy operated under the concept of 'Blitzkrieg warfare'. The issue to be discussed below is whether such an approach is justified. One could be led into thinking that the low production volume of major equipment and weapons on the initial stages of war versus her enemies Germany armed for breadth not depth. As it turned out later on the German industry was in many respects not ready for supporting what became the total war

According to General Georg Thomas, one of Fuhrer key advisors, „History will know only a few examples of cases where a country has directed, even in peacetime, all its economic forces so deliberately and systematically toward the requirements of war, as Germany was compelled to do in the period between the two World Wars”. From 1933-1939 the sums spent by Germany had spent on military infrastructure grossly exceeded those of the western allies, with the German yearly average expenditures exceeding 10% of its GNP. In 1934 Hitler – as he believed that the war will be a long one – had ordered the mobilization of 240,000 industrial plants for war preparation and armament production and for the preparation of all economic forces for war. It can be proved that Four Year Plan drove the economy in two very different and competing directions; as it earmarked large sums to 'indirect armament' or intense, long-term capital investment in the arms industry. One might wonder whether far-reaching, expensive and time-consuming projects aimed at recapitalization and expansion of such sectors as the steel, chemicals, motorcars, rail, aviation, and weapons industries would have been undertaken for a war of short duration. The German aircraft industry's growth constitutes vivid example of the country's commitment to a large-scale war effort.

Table 5. German Aviation Industry Employment/Aircraft Output

YEAR	TOTAL EMPLOYEES	AIRCRAFT OUTPUT
1933	4,000	368
1934	16,870	1,968
1938	204,100	5,235
1939	900,000	8,295
1941	1,800,000	11,776
YEARLY GROWTH %	115%	N/A

Source: Williamson Murray, *Strategy for Defeat: The Luftwaffe 1939-1945*, p. 7.

But there are other factors and data which show that Nazi government was committed to utilized Germany's scarce resources and realign the country's economy through the redistribution of labor into newly established industrial sectors. Ready examples of such commitment are to be found in the projects aimed at assuring self-sufficiency in oil and other non-economically viable substitute war materiel. Had the short war been planned, and conquest If Hitler had planned for a short war and presumably one Germany would win, why had he ordered investment in resources that would become readily available in newly occupied territories? The very concept of 'lebensraum' required Germany to battle her European enemies on a gargantuan scale In fact, in 1938 following Munich Hitler revised weapons output to what Milch called, „A gigantic armament program, which will make all previous achievements appear insignificant.” In May 1939 Hitler announced, „The government must be prepared for a war of ten to fifteen years duration during which the requirements of the army would become a bottomless pit.”

I am of the opinion that the Third Reich failed to optimally use the resources it possessed (in terms of labor and capital equipment). Shortages of labor, failed conscription policies, decade-long investment in plant and equipment, and yet German economic output and production of war materiel never truly achieved full capacity. To understand this facet of the German war machine may help explain its defeat in World War II.

3. WAR ADMINISTRATION AND MANAGEMENT

Management of the German Economy

Throughout this text the notion of the Nazi government bureaucracy's inefficiency. On a daily basis German economy functioned under the supervision of civil servants; however, in 1933 the NSDAP had placed party loyalists in key positions In an attempt at consolidating power and rewarding party elite, a layered system of directorates and commissions was created. It is not surprising that such a system had a detrimental impact on the pace of day to day decision making. The clear lack of a central authority charged with overall control of the war economy allowed each level of the government to instill red tape and inefficiencies into the process.

Management and control of the German economy had a great deal to do with personalities, including Adolph Hitler, Herman Goering, Ernest Udet, Dr. Fritz Todt, Albert Speer and others. The success in the total war hinged on

their capabilities and expertise to understand wartime economies. The real problem was that several important posts were distributed not a meritocratic, but on a political basis.

On paper, the government of the Third Reich had very specific duties and responsibilities; however, the fickleness of political favor with Hitler made this nominal delineation of duties and responsibilities highly ineffectual. Decisions and agreements were routinely ignored between various agencies, or appeals were made to Hitler who overturned them. „Furher Principle” was the framework within which Hitler would issue decrees demanding immediate changes or increased weapons production. Such a control of decision centralized in the hands of the Adolf Hitler posed serious operational problems for the rest of the war bureaucracy. The Fuhrer decrees had an impact of the two-edged sword. On one hand, they were instrumental in streamlining the bureaucratic inefficiencies, but on the other they often caused or created conflicting priorities. It appears that Fuhrer couldn't discern the strategic consequences of continuously shifting priorities, as he wasn't fully war – if at all – of the finality of resources. And Hitler's decrees were able to easily overturn the painstaking planning and engineering efforts.

Hitler was distrustful of his key advisers and staff, since he perceived them as „treasonable, incompetent or both”. And since certain key officials – for example Goering – were not giving the true accounts and data to their Fuhrer numerous had to be taken on the basis of incomplete information. When knowledgeable experts threatened Hitler's inner circle of advisors, they were replaced or isolated regardless of capability, as was the case with General Erich Fromm, Chief of the Reserve Army. Fromm knew that weapons output was dangerously below planned levels, yet the staff kept this information hidden. Hitler seemed to prefer blurred lines of authority and often would task multiple agencies with identical projects, fostering great organizational inefficiency. Hitler had little education in the economics of war, yet was pivotal to the decision making process of weapons procurement. Hitler's opinion meant everything and countless weapons were altered or had their combat capability diminished as a result of instant decisions he issued. Tank production was particularly damaged as Hitler continued to demand larger and heavier weapons at the cost of offered less mobility and needed greater logistics requirements. During Operation Barbarossa, General Heinz Guderian urged Hitler for a 20% production allocation for tank spare parts; Hitler refused while also knowing that tank tread-life in Russian terrain would be only 400-500 miles.

Hitler was also fascinated by new German technology, much of which was years ahead of the rest of the world. At the same time, though, new projects

were costly and consumed large amounts of manpower, scarce materials and production capacity. The highly advanced V1 and V2 rockets are a testament to German engineering, but the technology was untried and the weapon never reached the desired production capacity. Even if the rockets had reached maximum production, they offered little in terms of changing the course of the war. The V2 was expected to deliver twenty-four tons of bombs per day to London, yet B-17s were dropping 3,000 tons per day on Germany. In fact the cost of one V2 easily surpassed one fighter aircraft. Albert Speer said, „It is quite clear we should not have built them...the rockets were too expensive”. In this example Germany staked its future on advanced technology weapons when the focus should have been on the mass production of proven weapons.

The concept of political primacy over ability accurately describes the appointment of Goering as chief of the second Four Year Plan, head of the Luftwaffe and chief of the Office of Central Planning. Beginning in 1939, Goering chaired the Office of Central Planning which was created to consolidate economic decision making to ensure logical and rational production schedules. Instead, the office oversaw production conferences where the services fought bitterly to gain access to raw materials and production facilities, often to the detriment of the other branches. The concepts of long-range planning and inter-service cooperation in production and development were completely foreign. In fact, in 1941 Milch believed the General Staff to be completely ignorant and felt that no true strategic plan existed for Luftwaffe recovery, despite severe combat attrition, which had caused front-line strength to fall 35% in two years. Production contracts were single – service and normally called for small production batches resulting in output surges followed by periods of inactivity, exacerbating the poor use of production resources. Goering also used his power over the other services to ensure the Luftwaffe received excessive resources and raw materials. In 1942, Speer found that Goering had allocated 16,000 pounds of scarce aluminum per fighter aircraft to be built; yet only 4,000 pounds were required.

As Minister of Aviation, Goering refused to subordinate himself to Minister of War, Werner von Blomberg, making coordination and planning between the services nearly impossible. By all accounts Goering lacked the necessary management skills for any of his positions, such as an understanding of mass production, logistics, supply, and engineering technology. Following the Czech invasion, Goering refused to follow the recommendation of after-action reports calling for the Luftwaffe to devote 20-30% of capacity to spare parts. Goering understood Hitler’s fascination with production quantity and refused to alter output. Albert Speer’s memoir recalls Goering being

asked about a four-engine bomber and Goering replied simply, „the Fuhrer only cared about the number of bombers built, not how many engines they had.” The lack of leadership oversight and the fascination with production quantity was so great that new aircraft were of poor quality and often delivered to units with key components missing.

The Role of Military Bureaucracy

The growth of the German military-industrial complex exacerbated the need for skilled management, ultimately becoming a fundamental roadblock to expanded production. Despite the vast resources flowing into war industries, Germany could not find enough skilled management to supervise operations. This was a problem specific to Germany and how she utilized her personnel. While the allies retained officers with superior management and leadership abilities on staff, such as General George C. Marshall for the United States, the Germans focused on the operational level of war and placed their top military officers in the front-line units. Crucial areas outside of combat arms, such as logistics, supply, production and engineering, were all considered second-tier assignments in the German military. Even when production and output of war materiel were paramount due to shortages, the military was unwilling to release scientists and soldiers with the requisite skills needed to increase output.

Production Rationalization

Hitler had a genius for mastering and recalling production figures and fully understood that weapons production was continually falling short of planned targets. Despite efforts under Dr. Fritz Todt, Minister of Armaments for the Third Reich, production stagnation and inefficiency could not be eliminated from the German economy between 1939 and 1941. The system in place was filled with bureaucratic meddling and competition for resources between branches of service. Hitler spoke of rationalization as early as 1939, but failed to offer his full support by issuing a Führer Directive for rationalization until late 1941. The directive called on German industry to streamline production using a highly successful World War I strategy, developed by Walter Rathenau, to increase output of armaments. Albert Speer, formerly the Third Reich Architect, was tasked by Hitler to lead the effort in reforming the stalled German economy following Todt's death in an aviation mishap.

The Speer ‘production miracle’ was accomplished essentially in three ways. First, Speer worked with industry leaders to eliminate the adversa-

rial relationship that had permeated the system for years. Each specific industry had an administrative council charged to find and implement the best and fastest methods of production. This process of industry committees, which was begun by Todt and also a product of Rathenau, proved very effective. **Facilities that were highly inefficient or used excessive raw material or labor resources were quickly identified and converted to optimal methods of production. Speer accomplished this simply by eliminating the cost plus fixed profit contract for weapons.** The Speer Ministry identified a target production cost for a given weapon, then any amount private firms could reduce costs further became profit. Firms now had economic incentive to improve production, which caused output to climb rapidly. In less than one year Speer had increased German labor productivity by nearly 60%.

Secondly, Speer restructured the number of armament manufacturers by quickly identifying facilities that could never reach mass production and had them closed. This freed critical labor resources to satisfy shortages in other areas of the economy. Speer also transformed German factories by using scientific management and time-motion studies to optimize factory floor space. In this process Speer repeatedly found that Germany had more than adequate production facilities—they had simply been used very inefficiently. For example, production of the Me 109 fighter increased from 180 to 1,000 per month, while the number of factories decreased from seven to three. Speer also introduced supply chain management and an inventory control system after discovering that production delays were often caused by the delay of a single component.

The final effort at rationalization was reducing the number of types and variations of weapons produced – a problem deeply embedded in the German arms industry.

Table 6. Speer Rationalization Efforts

EQUIPMENT	VARIANTS BEFORE	VARIANTS AFTER
Trucks/Lorries	151	23
Types of Military Glass	300	14
Light Infantry Weapons	14	5
Anti-Tank Weapons	12	1
Military Vehicles	55	14
Tanks/Armored Vehicles	18	7
Artillery	26	8
Light/Heavy Flak	10	2

Source: R. J. O v e r y, *War and the Economy in the Third Reich*, p. 363.

The rationalization strategy shown above was highly effective and demanded the production of standardized parts across all sectors of the economy, from nuts and bolts to entire weapon systems. **Speer's efforts culminated in the German economy finally achieving mass production.** The index of armaments, which tracked overall German arms production, climbed from 100 in 1941 to 344 in 1944; moreover, Speer believed output would have climbed an additional 30% if not for allied bombing efforts

The Four Year Plan of 1936 in part caused Speer's successful efforts at mass production. The years of heavy capital investment in new plant and equipment transformed the typical 'cottage industries' of Germany into huge industrial enterprises much like those found in the United States. The efforts were also not universally effective. Germany had only one vehicle plant with automated assembly lines on a scale similar to Detroit manufacturers, yet it never exceeded 20% of capacity during the war and often sat idle. The allies were also achieving record increases in production and output. Between 1941 and 1944 U.S. labor productivity grew by 100%, in essence nullifying the gains made in Germany. **Perhaps the greatest factor in limiting continued increases in German output was the allied bombing effort. German industries had consolidated into larger, more efficient facilities but also ones much more easily attacked by massive allied bomber formations.**

The historians devoted to 'Blitzkrieg economy' use the massive increases in output achieved by the Speer Ministry as evidence of a less than total war effort by Germany prior to 1943. In fact, Germany's total war effort of 1939 differed from that of 1944 in only two ways. **First, the shift to large, efficient production facilities greatly increased the overall output of weapons available. Secondly and perhaps most significantly, the economy was transformed from one filled with rampant inefficiency to one which effectively and efficiently managed her scarce resources.**

Two simultaneous events have convinced even the most hardened National Socialists, that the war won't be a short one, and that efforts taken so far were not sufficient. Those fatuous events were: the entry of The United States into the war, and first defeats inflicted on the German Army by Soviet forces. We can argue whether Hitler was at this juncture aware of the seriousness of the situation, however the need of wartime planning aimed at satisfying the needs of both military and civil population revealed itself with painful clarity. Breakdown in the vision of leadership coincided with the fatal automobile accident, which took the life of the Minister of Armaments and Munitions, Mr. Fritz Todt, whose mission was subsequently entrusted – February 1942 – to the architect Albert Speer.

The system of loose negotiations between Wehrmacht and Reichsbanks, industrial sectors and other agencies, negotiations which served to agree the distribution of steel and other critical materiel, was replaced in the spring of 1942 by new Central Planning Agency (Amt für zentrale Planung). Since then Wehrmacht's orders had retained their priority. In exchange for freedom of choice of suppliers, which was formerly Wehrmacht's prerogative, Speer's Ministry took control of Wehrmacht's orders and decided which factories were to receive orders and which production methods were to be used. Many inefficient factories had been closed. Industry was burdened with implementing new production methods, technically and economically rational ones and at the same time contributing to better utilization of productive capacity. Competing factories were combined under expert supervision of industrialists and technologists, who in turn obtained complete control over regulating entire industrial sectors. However many industrial sectors didn't like the idea of giving up inefficient actions and – instead of rational organization – new havoc had been created, one in which numerous controlling agencies competed and cooperated at the same time. Static and system of information was a grotesque maze – for example watchmaking sector – by then aimed at producing munitions, fuses, machine parts and measuring equipment – was controlled by about dozen of committees, industrial groups and artisan's associations and had to fulfill orders of various decision-making and controlling bodies.

Even in spite of such shortcomings, embedded in fast reorganization of Speer's agency, it managed to reach – in a short time – astounding results in terms of rationalization. Not only had the production been increased, but enormous savings of resources and labor were achieved. Production of armaments and munitions, which had been stagnant in 1941, under first five months of Speer's „rule“ (March 1942 – July 1942) climbed by 55%! Such a growth wouldn't have been possible, had the production capacity been utilized in a rational manner prior to Speer's management.

The success of Speer indicated how unprofessional and outright stupid the management of economy had been prior to his „rule“. In the first stage improvement in production was – more or less equally – spread over all kinds of armaments. Subsequently – with the fast change in the strategy of waging war – the focus was placed on tanks and aircraft.

The issue of decision-making power in the Third Reich has always been kind of abstruse and difficult to analyze. Orders sent from the very top were gradually diluted, while passing through the successive stages of the administrative procedure. Since numerous decisions were delegated by Fuhrer to his

subordinates to take and even if it was he who made ultimate call, his decisions had to be implemented by subordinates.

So the perception of the Nazi Germany as a top to bottom monolith is far from the truth and nowhere was this lack of uniformity more prevalent than in the field of economy, and administration of its resources as well as economic policy making.

Careers of Speer and Todt, can't be regarded as an exemplary model of bureaucratic success, as both gained renown for their ability to avoid being bogged down in administrative bickering, with the effect being revealed as a greater operational efficiency of their ministry, compared to other ministries of the Nazi Government. However the „compartmentalization” did not stop at the level of national government, and various ministries weren't the final element of the puzzle. The Ministry headed by Speer wasn't per se an uniform organization, but had different sections of the economy and branches of industry supervised by different appointees.

It goes without saying that turning economic potential into required production demanded extensive control not only over the sectors of the economy, which produced directly for war related purposes. Consequently the Economic Ministry's strength, importance and position in the nation increased proportionally to the country's involvement in war.

The mobilization of the Third Reich's economic resources had not only economic and purely administrative dimension, but also a political one, and it was that last dimension which made an effective control of economy such a ponderous task, leading not only to delays in arriving at the decision, but also often making such decision suboptimal ones.

And it was either the inertia of the political machine or its exact opposite – the excessive reactivity to economic and administrative solutions proposed by Speer, which made his life so miserable. His attempts at simplification or streamlining of economic policy were bound to encounter vehement opposition. Speer understood such simplification in his own way, as extension of his Ministry's control of various sectors of the German economy and such an approach was objected by the political, military and economic circles.

The origins of the Reichs Ministry for Armaments and Munitions were typical of an ad hoc committee – Mr. Todt inaugurated its activity and was first person to stay at its helm. The Ministry's tasks initially encompassed only the increase in production of munitions and reducing the consumption of sensitive raw material (copper).

Such relatively narrow definition of Ministry's activities and responsibilities was coherent with the small size of its staff at the beginning of opera-

tions. However, in just over five years – between March 17, 1940 and the end of World War II it had spread beyond the wildest imagination and became one of the most important offices in the Third Reich and achieved organizational complexity of a behemoth. Below I will focus on the changes which took place in the so called meantime (between 1940-45) and how such changes were effected.

The issue of efficiency of the German economy can be linked to the fact, that certain key nature aspects of the war economy had never been supervised by the Speer's Ministry – as for example finance and procurement of raw materials. Other important aspects of the economy – as for example the production of aircraft – were referred to this ministry when it was already impossible to revert the course of events and avoid the ultimate defeat.

From this angle, I would like to pose a worthwhile question related to the impact of political pressures on the effectiveness of Germany's war economy. Speer believed that long-term planning wasn't implemented until spring of 1942 and subsequently – May 1942 – Armaments Office was taken from OKW and WiRuAmt was combined with the Ministry. Later on, in June 1943, the Ministry obtained direct control over naval production, while responsibilities in the field of war production still remaining with the Ministry of Economy were transferred to Speer's Ministry as late as September 2, 1943. All those moves combined led to Speer's obtaining direct sway over large swathes of the German heavy industry. Henceforth Speer was referred to as the Reichs Minister for Armaments and War Production. In June 1944 his Ministry took over the production of air armaments, which constituted a crowning achievement in the power struggle for the control over the keystone war production. However, the question is whether at that time there were any chances of turning the tide of events and avoiding humiliating defeat.

It is commonly accepted that gradual expansion of the Speer Ministry's prerogatives took place in the atmosphere of fierce political bickering and active opposition to Speer's projects. The first stage of his actions, which resulted in bringing WiRuAmt under his supervision and establishing effective channels of cooperation with Navy and AirForce as well as creating effective control over raw materials in the German economy, was relatively smooth. But the twelve months which elapsed between June 1942 and 1943 were much more stormy, as Speer encroached upon well entrenched representations of vested interest.

It's worthwhile to mention here, that Speer's predecessor Todt had very difficult relations with Goring, whose opposition to the idea of Central Plan-

ning had delayed the Plans' operation by no less than the whole month. But, even when the Central Planning began to function, Speer's exercise his control of it in the capacity of Georing's deputy!. This delegation of power and prerogatives by Georing was never clear-cut and the position of the Four-Year-Plan-Office wasn't firmly defined and set. Goring's personal features, such as his declining physical health and mental capacities, were behind his bursts of bad temper and disputes over the limits of Speer's powers, with such disputes starting as early as in October of 1942. Georing clung decisively to his functions as Head of the Four-Year-Plan Authority. Speer's ability to implement his visions was significantly limited by the fact that he had never been granted control over the whole of the industrial war economy and the Four-Year-Plan, no matter how hard he claimed it.

In addition to Georing having an upper hand and being empowered to place limits on his opponent's sway over the economy, Speer had other strong adversaries – one of which was Mr. Sauckel, who with his apparatus was responsible for labor control. Sauckel was interested in supervising labor employed in the building sector and controlled by the Organization Todt., while Speer strove for control of the utilization of foreign labor force, employed outside of Germany, considering those workers vital from the perspective of the armaments industry. The ensuing tensions were severe, and in May 1943 Speer in order to assure the supply of workers in the Ukrainian iron-ore mines had to obtain special permission from the Furher.

Therefore, political process and ploys of various vested interests were partially the reason behind the lack of Speer's Ministry success in becoming the omnipotent Ministry of War Production.

Certain progress was made possible thanks to the conducive changes on the political front, such as Reader's (Commander in Chief of the Navy) bent on maintaining organizational independence of the Navy, even in spite of favorable opinion on cooperation with Speer's Ministry by Donitz (who being a more of an obedient Nazi – type, was also interested in focusing naval production on submarines). In fact Speer and Donitz were on very friendly footing as a result of past cooperation in France. In January 1943 Hitler decided to profoundly shift the framework of naval production by ordering termination of work on the construction and conversion of longer vessels. All battleships were decommissioned, unless they were useful for training.

Such a move freed the aircraft used to protect such vessels to perform other assignments. From the raw-materials and such a decision wasn't in fact as „productive” at the time since as little as 125 thousands tons of iron were obtained from the scrapping the larger vessels. Donitz saw U-boats as a sal-

vation and decided to transfer their production under Speer's authority, keeping for the Naval High Command some of the dockyard's repair functions and control of naval arsenals. Both parts were so willing to cooperate, that Navy and the Ministry held an official joint conference, even before Hitler sanctioned the increases in the production of submarines (to 40 per month) called for by Donitz.

June witnessed another signing of an important agreement by the Speer's Ministry, this time with the Minister of Economy, when the latter released its hold on the sectors of the civilian economy, other than those supplying of the civilian population with other goods than foodstuffs. Respective agreement signed with Minister Fink, probably on June 8th actually formally sanctioned a well-established practice under which Speer, aiming at the achievement of armaments' production targets interfered in the competences of the Ministry of Economy.

But even the above-mentioned successes did not obscure the fact, that Speer's relations with such high-rank decision-makers as Georing, Sauckel and organizations such as the Air Force were very tense and did not allow him to implement his own personal vision of how the war economy should operate.

For the Ministry of War Production to be unable to control the production of aircraft was a serious shortcoming, to put things delicately. The very issue of producing this most complicated and technologically constantly evolving branch of armaments exemplifies one of the greatest weaknesses of the Third Reich's war economy, weaknesses attributable to poor management of the limited existing resources.

It was a theatre in which the drama of political and economic tensions and pressures was played with changing intensity and in the best and most vivid sense showing the futility of purely one-sided (economic) analysis of the German economy. The problems revealed within the framework of such production were endemic to the organization and character of the Nazi State.

Let's take an example of Luftwaffe, which was very effective against Poland in 1939 and France 1940 and in the first stage of war against the Soviet Union. Well-trained pilots in their technically superior aircraft wreaked havoc on the enemy lines of supplies and on the morale of civilian populations of the enemy. It's therefore a bit surprising to learn that the early programs aimed at increasing the strength of the Air Force were not entirely successful.

When WWII commenced, Germany intended to expand the production of aircraft to 2 thousands units per month by the end of 1940. In the 1940 this

ambitious program was revised upward on two separate occasions, however the actual production lagged far behind these lofty ambitions as in December of 1940 only 779 planes were built.

The main effort in production of aircraft was aimed at building bombers – at the expense of fighter planes – as the German decision makers were so assured of victory that they focused not on the development of new models of planes, but on continuing production of old and established technical solutions. In the context of prolonged war with Russia, German aircraft lost their modern edge, while the inability to reach quantitative production targets motivated the High Command against the upward revisions.

And while in the other sectors of the economy, Germany switched to full-scale war production, in case of aircraft it kept on applying the economic principles related to the concept of Blitzkrieg, without taking into account the changing strategic situation. The targets were overstated and in June 1943 Germany was able to produce as much as 2316 aircraft (quite short of planned 3000 units for that month or 88% of the planned quantity) which was slightly higher than the number planned for December of... 1940. It is interesting that even the bombing of factories by the Allies did not impact the production targets in a logical manner – quite to the contrary these targets were expended even more.

The relative proportion of aircraft used for defense of Germany's territory did not grow even under the circumstances of heavy enemy bombing, as Goring planned to take retaliatory measures against England and with the technical complications of the production of bomber planes (as opposed to the construction of fighter planes) the numeric plans were impossible to reach.

There were also severe setbacks in the production of individual types of aircraft, caused by both, severe bomb raids by the Allied Powers – as it was the case with the bombing of ME 108 and ME 109 components and assembly plants located in France – and by other factors unrelated to bombing – e.g. production of ME 210 was discontinued in the middle of 1942, to be replaced by the ME 110. The latter decision required major retooling of all factories previously engaged in the production of ME 210.

One of the problems which stemmed from the different approach to producing aircraft on one hand, and to producing other armaments on the other, made the Air Staff to harbor illusions that planes were produced in an environment characterized by an abundance of raw materials and other resources. Seeming not to grasp the painful reality, Goring used his personal clout to effect scarce resources being earmarked to the production of aircraft, making

this sector a „spoiled child” in comparison to other sectors, branches and projects. Therefore, the Air Staff places quite extensive demands in terms of production of various types of planes (as evidenced by the production of 30 different types of aircraft in June of 1943). The Air Staff’s constant demands for modifications of the existing types caused the enormous elongation of the period elapsing from the prototype state to the early models and to subsequent series production. The above-mentioned period was – by certain accounts – 5 to 10 times longer than it could have been, had the process been more logic – based or rational.

Such a mistaken policy of the Air Staff was due to the conflicts between antagonistic interests of producers, each of them intent on having their prototypes becoming final production decisions. At the beginning of 1944 concentrated action of the manufacturers led to the blockading of a quite positive and welcome movement aimed at placing the development of an individual type of aircraft with 1-2 companies in order to achieve economies of scale and specialization.

Inefficiency of the production methods was quite common a phenomenon, as political bickering and lack of effective supervisory control made the production of aircraft subject to lesser pressure than applied to other producers of armaments. The woes besetting aircraft production spilled into other sectors of the economy. Lack of skilled labor led to the recalling of skilled workers from the army, as was the case in the end of 1943, when the production of ME 262 and other types of planes created immediate demand for 3000 tool-makers.

It was apparent, that situation demanded reorganization efforts and deep ones to. However, Goring lacked decisiveness and being an ultimate authority in the Air Force e resorted only to occasional discussions with the representatives of the Air Staff and producers over a dinner to blame industrialists for not being able to deliver superior planes. On such occasions industrialists, would take refuge behind labor shortages and the solutions were not proposed and discussed. The Speer’s Ministry could have been capable of instilling more effective and rational organization of aircraft production, however Goring and Air Staff were adamant in their opposition to such ideas, as to the ability to dictate plane types to be produced was of paramount importance.

In the end of February 1944, 75% of the airframe components and assembly plants were in the state of structural damage estimated at 75%, while equipment and tools were damaged in 30% leading to the decline in output next month amounting to 2/3. Reserves of materials and accessories were attenuated by the commencement of new tank – production program. Under

such circumstances aircraft producers would have problems with tools and parts, even without Allied bombing. On top of all of this were growing transport problems.

Producers began to look to Speer for assistance, recognizing his growing control of all economic activity and with realization that the nations livelihood was dependant not on new strategic solutions but on sheer magnitude of production. However the perception was that Speer's Ministry was more interested in assigning priority to the branches of armaments industry, which it already had under control. Milch – over Goring's opposition – agreed to combine his own staff with the Speer's – as a result of miniature ministry was formed preoccupied solely with the production of bombers (hence the name Fighter Staff). That organization started operations in March of 1944 and on March 5th as the Fuhrer Conference general policy outlines for this unit were laid out. The main objective was to increase production effort to the previously unknown magnitude. Production workers were to be subjected to special treatment – bonuses, clothing, food – in exchange for working longer hours (72 hour working week). In order to protect factories special „flying squads” were kept in reserve to immediately report to bombed factories. In order to boost morale, supervise emergency rebuilding and restoration of production. Special protective devices were used to safeguard machines, and wooden and inflammable materials were removed from the factory floor.

The necessity to maximize the utilization of productive capacity demanded espousing more rational approach to production planning, one based on solution that had been in existence for more than 2 years in other parts of the armament industry

In July 1944 the new unit (Fighter Staff) presented Program No 226, that was to replace Air Staff's Program No 225. The novel approach was to increase production up to 6400 planes per month at the expense of modifications and quantity of types of aircraft. Production of bombers was abandoned, much to the disappointment of Goring. To mitigate the impact of the bombings, certain extent of decentralization of production was introduced, which basically boiled down to the reduction in the number of main components worked on in a single plant in a give moment.

Such expedients however played only a second fiddle to the program of underground factories. Plans for the end of 1945 stipulated the construction of 3 million sq meters of underground space. In August of 1944 about 1 million of sq meters of such place was available for production, but subsequently the Allied Invasion caused the underground factory floor to shrink.

The very idea and practice of constructing underground factories dated back to the establishment of the Fighter Staff and it is worthwhile to note that Hitler himself regarded such a solution as a way to solving various problems related to war production of the Third Reich. The Fighter Staff was aware that the construction of underground factories would delay production of aircraft necessary for Germany's survival.

Speer considered Hitler's reliance on underground production schemes as a bad solution from the perspective of the economy at that time. Therefore, he tried to prevent them. However, some degree of production of aircraft parts was controlled by the SS (jet engines and V2) were to proceed more rapidly when in units controlled by the Speer's Ministry, since SS could rely on labor from the concentration camps. However, the production efficiency of the SS plants wasn't inspiring, even if the factories had been bomb-proof.

So the nature of the Third Reich's political system demonstrated once again its detrimental impact on its productive capacity. Even though, the formation of the Fighter Staff seemed to be a solution to many woes that were besetting the aircraft industry. Fighter Staff was an effective machinery in achieving enormous growth in the production of fighter aircraft, which took place between March and August 1944, and continued following the Fighter Staff's merger with the Speer's Ministry. However, the effective use of these planes in the battle has been hindered by the shortages of fuel.

Table 7. Production of fighter aircraft

Date	New production	Repaired	Total
1943			
July-December (monthly average)	1369	521	1890
1944			
January	1340	419	1759
February	1323	430	1753
March	1830	546	2376
April	2034	669	2703
May	2377	647	3024
June	2760	834	3594
July	3115	935	4050
August	3051	922	3973
September	3538	776	4314

Source: Alan S. Milward, *The German Economy at War*, University of London 1965.

These numbers attest to the Speer Ministry's efficiency in the wake of bombings, and reveal how application of resources and determination can serve to overcome external production problems. These figures merit few comments here. Not only had Speer put in motion the raw material supplies after the Fighter Staff had been established, but also the „strategic priorities” shifted significantly. Until the Fighter Staff was called into life, Air Force production was awarded lesser months than the production of tanks. However, in March of 1945 producers of components were ordered to supply aircraft parts and average monthly allowance for construction work in the aircraft industry for 1944 was increased to 42 millions RM (compared to 22 millions in December of 1943). Similar increases took place in the case of iron for construction reserves of machine tools. Judging by the success of the aircraft production after it had received full endorsement of the Speer Ministry's had such support been granted earlier, the former programs of the Air Force would have succeeded to a much larger extent.

So the achievement of the Fighter Staff in the elimination of organizational mistakes in the aircraft production can indicate that the problem of ineffective utilization of resources played very important part in the collapse of the Third Reich and that its ultimate defeat was caused not only by the shortages of resources, but also by inefficiency in the application of existing resources.

Speer waited with increasing resources allocation to aircraft production until this part of the war economy came under his complete control. Additionally the Fighter Staff was quite successful in bringing production to full capacity, where it remained below it, on account of policy of continual changes in types of planes produced by individual factories.

The growth in the number of aircraft was facilitated by the modifications in the categories of planes produced by individual factories. The growth in the number of aircraft was facilitated by the changes in the categories of aircraft demanded, namely replacement of bombers with fighters. One estimate shows that instead of producing one He 177 bomber 5 fighters could have left the production lines. Such a decision had an enormous magnitude and increased selectiveness of the Fighter Staff as to the production of types to be made in large numbers facilitated the production growth.

Similarly, profound changes, to those implemented by the Fighter Staff, took place simultaneously in other sections of war production. As it was the case in the aircraft production, quantity was assigned top priority over quality in the production of tanks and rifles. The earlier concept of victory through quality had been replaced with the idea of survival at any price.

Speer's policy of establishing one omnipotent Ministry of War Economy received a strong boost from the successes achieved by the fighter Staff. However, Goring did not treat Fighter Staff as anything more than a transitory solution. In the construction of bomber planes (recall that their production had been almost discontinued at the time) was taken over.

The Fighter Staff operated until August 1, 1944 and after that date it was dissolved and all Air-Force production was supervised by the newly founded Armament Staff. So once again, it has to be underlined that inability of the Nazi economy to produce sufficient number of planes stemmed – to a large extent – from the faults of political process as the required strong control of the central authority was never implemented. Hitler did not want a strong central government, as he perceived it as a threat to his own sphere of decision-making. Speer wasn't complacent and the trust placed in him by Fuhrer stemmed not from Speer's ability to agree on all issues, but from his expertise and irreplaceability. With the prolongation of war effort the need for omnipotent Ministry of War Production capable of better utilizing economy's existing potential became increasingly acute. Unfortunately political intricacies of the Third Reich required that Speer had good standing not only with Hitler but also with other top leaders. It has been already mentioned here that Speer's had tense rivalry with Goring, nevertheless his tensions with Borman (whose power was greater than that of Goring) as the animosity between the two had profoundly deleterious impact on the condition of the war economy – this rivalry stemmed from differing perceptions of the nature of such economy. Borman and gaulaiters were opposed to the idea of total war, and they ceased to oppose Speer's projects when it was too late to turn the tide of events.

4. „THE COLLAPSE”

The military advances of the enemy forces coupled with and accelerated the disintegration of the German economy, though this increasing economic collapse cannot be attributed solely to the enemy's occupation of the German territory. One must refrain from making sweeping generalizations about the economic collapse of the Third Reich, as breakdown of economic structures did not befall to all sectors of the economy at the same moment. The performance was highly varied, as for example numeric targets of the production of tanks were achieved almost to the last days of hostilities, while decreases in the production of munitions came to the fore as early as in September

1944, and in January of the next year the production dropped to the level previously observed in November and December of 1942, to be halved between December 1944 and January 1945 (though even in its nadir it was higher than observed in the period of greatest military successes). In the fall of 1944 only the most hardened Nazis could harbor any hopes that the war wasn't – for now from the economic perspective – lost. Though serious analysts can't overlook the importance of concentrated Allied bombing efforts in accelerating the drop in production of the German economy, the impact of such bombings shouldn't be lionized. Even Speer himself thought – somewhat „bookishly” that even if the bombings were less acute, the war production of Germany would have been finally limited by the shortages in the supplies of raw materials. In reality Germans were able to make up for the scarcity of raw materials by conquest and substitution. Allied bombing was instrumental in bringing to light the shortages of oil and to lesser degree of steel. Bombing had significant importance in bringing about the collapse of the German economy, but equal „credit” should go to chronic shortages of labor force and to the enemy's liberation of the territories conquered by Germany in the earlier stages of hostilities. Another factor behind economy's disintegration was the morale of the economic administration as it gradually (certainly starting from the beginning of 1945) has given up loyalty to the economic policy of the Nazi regime.

The crisis was caused by the shortage of fuel, as exemplified among others by the fact in May 1944 the decline in the production of fuel for aircraft has been observed for the first time. Similar difficulties arose in the case of diesel fuels, carburettor fuels and production of propellant gas (the most important substitute for these fuels). The vicious circle was revealed since the increases in fuel productions were impossible without better protection of factories by the Luftwaffe. Unfortunately to step up such protection more fuel was required to propel the idle aircraft. So, the attacks continued reducing the production capacity to the ground. In September not only the mobility of the Air Force was called into question, but also that of the Armed Forces. The survival depended on two crucial factors: ability to split up the enemy bomber attacks by improved application of the fighter units and bad weather setting in early fall. Miraculously the elements helped the Germans to survive few months longer and October and November figures for production of aviation spirits must have warmed the hearts of the German leaders. However after January 1945 the planned use either of the Air Force or the motorized sections of the German Army became impossible, allowing the enemy to destroy the major oil-producing works. Therefore the strategic air raids on the factories producing synthe-

tic oil must be regarded as one of the most important elements in the breakdown of the German economic structures.

On the other hand the massive production of tanks continued until the end of war despite the enemy's air raids and was one of the greatest success of the Third Reich's war production.

There were serious differences between civilian economists on one hand and the military economists on the other as to the factors that would lead to ultimate demise of the German economy. While the majority of the first group predicted that the collapse would stem from serious shortages of essential raw materials, the representatives of the second were focusing on the country's excessive dependence on the industrial district of Ruhr, as they consider the position of the district vulnerable and well acutely aware that industrial production in Germany hinged upon the supplies of raw materials from the Ruhr regions. 80% of coal used by the German economy was produced in this region and large quantities were dependent on efficient transport to other locations. The only feasible solution to the problem of the transport of coal were railroads, and destruction of the railroad facilities could not be made up for by switching to lorries. Before November several power stations were on the point of complete closure. Many local gasworks and important armament works and large steelworks were not able to function as they run out of coal. Gasworks and power stations were being allocated only 1/3 of their coal supplies from the previous year, while bakeries, dairies, hospitals etc. received only 1/4 of the former allocations.

The bombing of the Ruhr and the shutting off coal supplies led in March 1945 to a deep crisis in the steel industry. In Speer's own words the battle for the Ruhr was a battle for the existence of the Reich, and it proved to be the truth. The failure of German coal supplies and steel production constituted the most important factor in Germany's defeat.

In August 1944 the various expedients used to date in order to obscure the painful reality that the Third Reich was taking power in the struggle impossible to be won also from the perspective of manpower, ceased to work. Enforced draft of foreign laborers, prolongation of working hours or productivity gains were not sufficient to overcome the demands placed on the labor force in the armaments industry. Bombing and shortages were bound to create pockets of unemployment, even in industries which had not been directly hit by air raids. On July 12 Speer asked Hitler – in vain – to release between 100 and 1250 thousands of soldiers from the military to strengthen the armaments industry. Quite to the contrary Goebbels succeeded in having 200 thousands workers from the armaments industry drafted into army (followed

by another 100 thousands in September. The choice boiled down to having soldiers or workers in the armaments industry, however in October Hitler again decided against the Ministry of Armaments and Munitions as he became convinced that guns were less important at that juncture than soldiers, so all males between sixteen and sixty would become soldiers. Labor mobility was drastically restricted when it was more important than ever before.

Another factor that contributed to the Germany's demise stemmed from the fact that authorities followed the policy of having the essential war production within the frontiers of the Germany proper, which made it highly dependent on the imports of labor and raw materials. The process of adjustment as these territories were lost was a painful one, as neutral countries became increasingly reluctant to supply the loosing belligerent (as was the case with Swedish ores). Once the Ruhr and Silesia had been lost no proper war economy was possible.

However stocks of non-ferrous metals were generally sufficient at the end of the war to have sustained German armaments production for several additional months.

It appears that Hitler, once the war seemed to be lost, believed that Germany should be obliterate, while Speer wanted to make the best possible arrangements for the future in order to make the peace more bearable. On January 30 1945 Speer informed Hitler that it was a matter of estimating with certainty the final collapse of the German economy in four to eight weeks. After this collapse the war can no longer be pursued militarily. Such a words had an effect of weakening Speer's position and after his bitter dispute with the Fuhrer on March 19, in which he opposed Hitler's scorched-earth policy, he abandoned all pretence of carrying out directives from the center and set himself to preserve as much as possible from the German economic life.

To all this causes must be added the final change of mind of Speer himself. The Speer Ministry had controlled the German war economy with increasing authority and increasing efficiency for almost three years. Its abdication from this position gave the final push to a tottering system.

CONCLUSION

Nazi Germany undertook one of the most comprehensive and costly industrial and military expansion programs in history. In an effort to transform the economic foundation of Germany, Nazi leaders implemented vast multi-year economic plans focusing on the expansion of heavy industry, the production

of arms and the attainment of self-sufficiency in key economic sectors. The scope and magnitude of the efforts undertaken to refocus the economy were unparalleled in the modern industrial age.

Despite the remarkable economic transformation, the underlying structural flaws in the German economy were never completely eliminated. Labor shortages and the lack of effective supervision and management of the economy repeatedly caused production crises. Years of planning and construction, countless billions of Reichsmarks spent and millions of lives wasted, yet the German economy never realized the full output anticipated by Hitler and required for total war.

This analysis of the German economy dispels the 'Blitzkrieg economy' concept as outlined by Kaldor, Klein and Milward. That theory fails to understand and consider the scope of long-term economic planning and capital investment undertaken by the Nazi regime. It also fails to properly assess the role of labor, including the female population. No other nation in the industrial era ever attempted economic restructuring in the magnitude of Hitler's Germany. Entire industrial sectors were created causing long-term and fundamental changes in the German economic landscape. As additional historians analyze the German war economy their analysis must focus on how the economy was managed by both political and military leaders. The 'Blitzkrieg economy' theory is woefully inadequate, as it fails to properly address these key issues.

Although impossible to quantify, the abject failure of the Nazi regime to effectively and efficiently manage the economy and weapons production were her greatest failures. With German production in 1944 still 30% below peak capacity, military historians must consider that had Speer's rationalization efforts come many years sooner the war's very outcome could be in question. Without question, history has demonstrated that for a nation to fully realize her war potential demands the synergy of her will to fight, her economic capacity, and her leadership's ability to skillfully employ these resources. Hitler's Germany emphatically proves that if any one of these areas is neglected, victory in total war is jeopardized.

In the end, Hitler and his fellow Nazi leaders must be deemed culpable for their failure to understand and implement the economic policies and oversight required to ensure Germany's industrial capacity was properly harnessed for the total war they had envisioned and indeed embarked upon.

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MOBILIZACJA GOSPODARCZA NIEMIEC PRZED I W CZASIE II WOJNY ŚWIATOWEJ

S t r e s z c z e n i e

Konsekwencją strategii Blitzkriegu i jej początkowych sukcesów był brak nastawionego na określone cele centralnego planowania produkcji krajowej, który był cechą charakterystyczną pierwszych 6 lat rządów Hitlera. Stan ten utrzymał się w czasie wojny.

Długotrwały system regulowania cen przez rząd i reglamentacji rozszerzono na większą ilość towarów, ale pod innymi aspektami system gospodarki wojennej niewiele odróżniał się od totalitarnej „gospodarki pokojowej”. Planowanie, jak i wykonanie założeń nie nadążało za wymogami zakrojonej na wielką skalę wojny napastniczej, jaką prowadzono.

Strategia wojenna Hitlera wymagała dokładanego planowania produkcji i zamówień na podstawie priorytetów obejmujących całą gospodarkę i wykorzystujących tak nagłaśniane niemieckie talenty organizacyjne. W praktyce nie powstała lista priorytetów ani agencja planowania posiadająca odpowiednio szeroki zakres uprawnień. W zamian wiele ośrodków („Bedarfstrager”) rywalizowało ze sobą o wykorzystanie surowców oraz mocy wytwórczych. Jak się okazało, Wehrmacht i zaopatrujące go działy przemysłu były tak przekonane o swych priorytetach, że problemy podaży wydawało się, że są rozwiązywane w sposób automatyczny. Reprezentanci Wehrmachtu wręczali zamówienia pracującym na rzecz armii wykonawcom, którzy z kolei żądali – i szybko otrzymywali – stal, ropę, węgiel, chemikalia itd. (zwykle w ilościach przekraczających zapotrzebowanie). Tym samym wiele surowców tracono na produkcję nie-

potrzebnych towarów, a następnie brakowało ich na bardziej istotne cele. Niedostatek i obfitość współlistniały ze sobą.

Błędem byłoby wnioskować z pomyłek i niedociągnięć planowania, że porażkę Niemiec w drugiej wojnie światowej można wyjaśnić szeregiem niewykorzystanych możliwości. Ani planowanie produkcji, ani mobilizacja na czas wszystkich potencjalnych rezerw nie uratowałyby Niemiec przed ostateczną katastrofą. Cokolwiek zrobiłyby Niemcy, wojnę wygrałaby strona dysponująca większymi zdolnościami produkcji samolotów, czołgów, okrętów wojennych. Tym samym od początku działań wojennych Niemcy nie miały szans powodzenia. Nie było tajemnicą, że Wielka Brytania, Rosja i USA mogły razem wyprodukować trzykrotnie więcej dowolnych artykułów militarnych niż Państwa Osi. Tylko niewiarygodny brak ekonomicznego zdrowego rozsądku i zasługująca na karę arogancja mogły skłonić przywódców Trzeciej Rzeszy do wiary w możliwość zwycięstwa w tej agresywnej wojnie.

Key words: Germany, war economy, arms production, system of planning, central management, price regulation and costs, The Four Year Plan.

Słowa kluczowe: Niemcy, gospodarka wojenna, produkcja zbrojeniowa, mobilizacja ekonomiczna, system planowania, centralne zarządzanie, kontrola cen i kosztów, Plan Czteroletni.