How effective was Germany in mobilising its economy before and during the Second World War?

This piece will argue that the Germany was not capable of winning the Second World War because its economy was too small to compete against the combined Allied economies but also by 1939 had structural failings in three of the four economic Factors of Production, Land, Labour and Capital and even if Germany had all the Land and Labour it needed it would still have not achieved full potential because of the inefficiencies in the Capital means of production. The fourth Factor, Entrepreneurship is not relevant to the Nazi dictated economy. For the Land factor, Germany was short of space and invaded Austria, Czechoslovakia, Poland and France for territorial expansion and all that could provide. It was not just a case of territory, Germany was also short of natural resources, there was limited access to resources such as coal, iron ore, bauxite and lignite. Additionally and critically, there was little access to oil and rubber; for those Germany had to invade Russia. For the Labour factor, Germany with full employment in the domestic economy in 1938 did not have enough workers for a war economy and additional capacity had to be found. The new occupied territories provided the much-needed forced labour and slave labour for the Nazi war machine. Additionally, there was also internal economic friction which hindered the development of a war economy, by definition this reduced effectiveness and efficiency.

This will show that Hitler successfully got the German economy back on its feet in early 1930s by reducing unemployment and then rebuilt the economy with motorization and then rearmament but using "funny money". Hitler appreciated that a war economy was required to fight a "Total War" against bigger economies and in 1936 he created a 4-year plan; but this did not complete due to the outbreak of the war. Economic success pre-war enabled Germany to be the second biggest economy in the world but its structure was a peacetime economy. Even by 1939 it was not a fully mobilised war economy; because at the end of the 1930s the strategic heavy industries had a resistance to change and were also badly managed and controlled by Goring. Additionally, there were no plans to mobilise relatively efficient sectors such as auto and airplane production, so there was a lack of central planning. When Hitler went to war in 1939 his were "the actions of a man who had lost control of his policies".[1] By the time Speer replaced Goring in 1942, his "production miracle" was too late to make a significant impact on the war because Germany was already facing defeat.

The inter war Weimar Republic was period of political and social unrest creating economic weakness. There was a shortage of capital for businesses which led to a dependence on foreign loans with high interest rates and a necessity to export to support the Balance of Payments. The Wall Street Crash of October 1929 was felt globally and the Great Depression that followed had consequences right up to the start of WW2. 1932 was the lowest point for the world economy when the Dow Jones Index dropped from its 1929 high of 381 to a low of 41 and by then the worldwide GDP had fallen by an estimated 15%. Additionally, Germany had to contend with the financial, territorial and military conditions of the Treaty of Versailles. The enormous financial reparations to be paid to the Allies for WW1 damages were 132 billion marks. These payments were almost impossible for Germany to make and were defaulted regularly. In 1931 the German economy was in such a bad condition that reparations were suspended for a year and the following year they were cancelled completely. Between 1919 and 1932, only 21billion marks were paid. Reparations were reintroduced after WW2 which included 50% of the outstanding debt from 1932. The final reparation payment was made in 2010.

It was an economic perfect storm for Germany between 1929 and 1932. As world trade collapsed and exports fell by two thirds the German economy was under even more pressure to pay overseas debts. The Weimar government with little room for manoeuvre; lowered interest rates, raised taxes,

[1] Richard Overy, *War and economy in the Third Reich* (New York, Oxford University Press, 1994), p 206

enforced wage and price control, cut government spending and took greater control over the banking system; whist trying to avoid fiscal policies that would be inflationary. These measures depressed demand and squeezed profits as unemployment rose. The subsequent twin issues of high unemployment for the population and the lack of liquidity for business were ideal conditions for a radical political movement to rise to power. By 1932, approximately 9m were unemployed, 25% of which were between 14 and 25 driven by a high pre WW1 birth rate and 20% were women. There were only 11.4m in work and for those, wages were low.

Even though there were signs of an upturn by the time Hitler came to ultimate power as dictator, after Hindenburg's death, in September 1934, he was between a rock and a hard place with the economy. The Nazi Party was still a minority party and he had to produce something for the benefit of the general population to maintain and build Nazi popularity. He could not be anti-capitalist as he needed industry to produce rearmament for the war he thought was necessary to right the perceived wrongs of Versailles. Hitler made the reduction of unemployment a priority in the elections with a campaign slogan of a "Battle for Work"[2] and when in power he prioritised policies accordingly. For those employed a shorter working week and a shorter working day were introduced. For those out of work there were state funded work creation schemes, "*Arbeitsbeschaffung".*[3] The Labour Service, "*Landhilfe*" a low paid community service where typically young people were sent from the cities to the country to work on the land which was eventually absorbed into the Hitler Youth. A programme to reduce the number of unemployed women was the Marriage Loan which encouraged married women to stay at home if their husbands were in work. It is questionable how successful these really were[4] but it removed these people from the unemployment statistics quickly which was good for Nazi popularity and propaganda. Additionally, a huge civil engineering programme to provide employment was begun to make up for the decline in infrastructure during the depression. Many of these projects were already planned by Hindenburg and Hitler continued them for the repair and construction of new waterways and bridges and the building of the Autobahns between 1932 and 1935. During this period, public investment accounted for 77% of all investment and 60% of work creation funding was for the Autobahns; 992,500 were employed on building the autobahns by 1934,[5] between 1932 and 1935 these the projects accounted for approximately 4% of GDP. Road building played a significant part in the German recovery[6] however in a period of low wages and with savings reduced by inflation there were not many, cars in Germany to make use of the autobahns and Hitler began the "motorization" "*Motorisierungspolitik*" of Germany.

In the early 20th Century Germany was slow to embrace motor transport and had one of the smallest motor industries in Europe which is surprising considering companies such as Daimler, Mercedes and Benz were early pioneers. Reasons included a fashionable attachment to the horse, the good German railway network but more importantly a conservative hostility to the mechanical age, which later influenced industrialisation and produced a society less wealthy compared to Britain, France or the US.[7] A consequence was that by 1929 there were a large number of small firms producing expensive motorised products compared to foreign competitors who accounted for approximately 40% of all cars sold in Germany. Imports particularly from US collapsed during the Depression. Subsequently German car prices fell and they became cheap enough for Germans with any savings to buy and the industry boomed from 1933, assisted by an upturn in the business cycle and the filling of a backward transport gap. By 1936 Germany was the world's third largest car exporter with the share of imported cars down to 9%.

[2] Ibid., p 37
[3] Ibid., p 5
[4] Ibid., p 50
[5] Ibid., p 78
[6] Ibid., p 77
[7] Ibid., p 68

Influences on car prices on the supply side included the lower cost of raw materials and the rationalisation of the industry as the number of small manufacturers and suppliers was reduced as they either folded or were incorporated into the big manufacturers such as Daimler-Benz, Opel or Auto Union. On the demand side, tax cuts stimulated demand which made vehicle ownership more attractive as interest rates reduced from 6% in 1932 to 3% in 1938. The boom following so soon after the Depression eased the problem of shortage of capital and dividends were generated and profits were ploughed back into the companies. By 1938 the German economy had recovered but it had become increasingly dependent on the car industry and Hitler intended to protect "*Motorisierungspolitik*" which was not just cars but commercial and agricultural vehicles, as it drove other sectors of the economy, such as the cement and construction industry and auto component manufacturers such as Bosch and Sachs. Hitler also had ambitious plans for a new Volkswagen factory to be producing 1.5 million cars and a plant for 300,000 tractors both reaching their targets within two years. Significantly, product research and development was carried out by companies such as IG Farben for the development of synthetic fuel oil and rubber; important for the next war to compensate for Germany's poor trading position in natural resources.

Additionally, but significantly breaking the terms of Versailles, Hitler embarked on a programme of rearmament. Begun in 1933 it was slow and uncoordinated, the three services working independently of each other and without a central plan. Typically, the Luftwaffe bought training planes rather than combat aircraft and the Heer commissioned improved or new bases rather than a fighting force or new weapons, whilst the Kriegsmarine only accounted for 13% of total military expenditure. When awarding government rearmament contracts, conditions included limits on dividends and profits and any profits over these limits had to be reinvested back into these companies, effectively the defence contractors were paying for some of the costs of rearmament, but there were issues on how this was to be paid for. During the early 1930s with the shortage of credit and liquidity in Germany, the work generation schemes, civil engineering projects and rearmament were funded by the government by paying suppliers with "Mefo Bills"[8]. This "funny money" was short term credit which, in principle, was to be repaid by the government out of future tax revenues after the economy had recovered but could only be traded between German companies for goods and services or to offset tax. The peak of "Mefo Bills" was during 1934 when approximately 1b RM was allocated to these schemes and the year with the highest repayments was 1938 when the government printed money to cover repayments as they became due. Significantly, "Mefo Bills" were not visible on the German Balance Sheet, GDP, so the Allies could not see the extent to which Germany was rearming. In 1934, two battle cruisers the Scharnhorst and the Gneisenau were being built, along with submarines secretly in Finland, Holland and Spain whilst the Luftwaffe was training pilots under civil aviation,[9] but serious rearmament did not start until 1935. Economist Paul Einzig wrote in 1934 "It is an exaggeration to attribute the trade revival exclusively to rearmament……war is not the ultimate weapon in the struggle against the Depression.[10]

By 1938 the German economy was strong, the second largest in the world, with full employment after the huge industrial expansion programme; but it was the wrong economy for war; it was out of balance between the strategic necessity of rearmament and social utility. Hitler's view was that defeat in 1918 was because the population was not prepared for "Total War" and he saw the link between the German economy and the military to fight a war, but the people had to be prepared for the conflict and the economy had to be able to feed them in addition to producing weapons. This was not a new idea for Germany, in the 1920s General Groener part of the Weimar government advocated closer links between the military and the economy. The head of the economic staff, Georg Thomas said about the aftermath of WW1 "modern war is no longer a clash of armies, but a struggle for the existence of the peoples involved. All resources of the nation must be made to serve the

[8] Ibid., p 9
[9] William L Shirer, *The Rise and Fall of the Third Reich*, (London, Pan Books, 1964), p 348
[10] R Overy, *War and economy in the Third Reich* (New York, Oxford University Press, 1994), p 68

war"[11], so the economics of war planning were recognised before Hitler came to power. However, Hitler declared in 1920 that "the basic feature of our economic theory is that we have no theory at all"[12] he did not consider economics as central to the war effort[13] but that racial character and the moral qualities of the fighter were the priority when armed for the creation of an "armed economy".[14] Hitler had the contradiction of maintaining the engine of the recovery, "*Motorisierungspolitik*", to demonstrate that Naziism was providing a prosperous lifestyle; whilst at the same time preparing for war. By 1939, the second largest economy in the world was devoting 23% of its GNP to military spending[15] but the Nazi concept of mobilising all economic potential, for "Total War", where everyone was a national fighter[16] was undermined by a lack of central planning and industrial sectors such as motor or aircraft production where there was no plan to convert to war manufacture.[17]

As the economy recovered Hitler introduced in 1936 the Four Year Plan which was not so much a plan as a series of four main objectives which made Nazi party dogma official government policy but there was with little detail behind them and it was over optimistic and fundamentally flawed. Firstly, Germany was to achieve *autarky*, to be completely independent from other countries within four years, to develop a "blockade-free" economy where vital war materials would be produced by German skills, chemistry and mining instead of being imported. This included the agricultural sector being able to feed the nation in war time, which was in crisis, having suffered bad harvests with yields down approximately 20% between 1933 and 1935. [18] Secondly, *Lebensraum,* partly to redress the terms of Versailles, the expansion of the German state through military invasion of neighbouring countries and then using their natural resources such as coal, iron ore, bauxite, lignite and labour including slave labour and machine capacity to support the war effort. These two objectives were carried out with the annexation of Austria and the invasions of Czechoslovakia, Poland and France and the subsequent use of forced and slave labour from these territories. Finally, two objectives that should have been very closely aligned; the modernisation of German industry and the rearmament for the war that the Nazis believed inevitable. With the motor industry at full capacity, heavy industry was in a different position. It was not in favour of *autarky* preferring to trade globally and there was resistance to embrace large-scale armament mass production in large concerns at the expense of smaller firms. Rearmament contracts, even with government subsidies, were not as profitable as trading globally on the open market. The relationship between big business and the government became increasingly blurred. Eventually, as it clashed with Nazi policy, industry became politicised, and a state-run iron and steel company *Reichswerke AG Hermann Goring* was established in 1937. This created a huge German industrial conglomerate ultimately using seized industries from the occupied regions to account for over 10% of GDP.[19] In 1938, Hitler expanded his military plans to match his foreign policy. The Kriegsmarine implimented the Z-Plan ordering 6 battleships, 4 aircraft carriers, 8 heavy cruisers and 233 submarines. The Luftwaffe had Plan8 which was for 16,000 new combat aircraft in two years. The Heer was told to expand motorisation and increase explosives production to the level of WW1, conscription had also been introduced in 1935. To fund this Hitler scrapped "Mefo Bills" and introduced Reich Loans which increased the public debt to 30%. This programme should have stimulated output in the *Reichswerke AG Hermann Goring,* but this wasn't well managed by Goring, whose slogan was "Guns before Butter". It was inefficient because from the top there was no central planning, it was overly bureaucratic, and the manufacturers were

[11] Ibid., p 178
[12] Hans-Joachim Braun, *The German economy in the twentieth century*, (London, Routledge, 1990), p 78
[13] R Overy, *Why the allies won*, (London, Pimlico, 2006), p 253.
[14] R Overy, *War and economy in the Third Reich* (New York, Oxford University Press, 1994), p 2
[15] Ibid., p 202
[16] Ibid., p 179
[17] Ibid., p 199
[18] Hans-Joachim Braun, *The German economy in the twentieth century*, (London, Routledge, 1990), p 85

[19] Ibid., p 85

allowed to resist modernisation. This lack of control allowed the Wehrmacht, responsible for procuring their weapons, to place orders directly with the manufacturers. This only increased inefficiency, as regular changes were made to specifications. Subsequently, there was no standardisation and there were too many good quality versions of all types of weapons. Despite the massive commitment of resources and labour, by 1941, 55% of the workforce were working on orders for the armed forces, but productivity declined,[20] output was not maximised; Germany was producing both guns and butter which was a huge waste of German "Total War" resources.

Hitler took total responsibility for the war economy and made the lack of manufacturing rationalisation a priority. In December 1941, Fritz Todt was made Minster for Armaments and Ammunition to drive the much needed transformation. He started to restructure, implementing a committee structure to manage procurement and innovation before his untimely death. Albert Speer was then appointed to continue the project which became the "Production Miracle" between 1942 and 1944. Speer revolutionised all aspects of the armaments industry, his standardisation simplified production. Some simple examples of this huge project from the aircraft industry were that the numbers of Messerschmidt ME 109 built increased from 180 per month in seven factories to 1,000 a month in three factories[21] and the Junkers JU88 bomber used over 4,000 types of nuts and bolts whilst its successor the JU 288 used only 200. Some of this reorganisation was also necessary because of a skilled labour shortage, as many of these workers had been allowed to join the military. The proportion of skilled workers at Messerschmidt fell from 59% in 1941 to only 21% in 1944.[22] Techniques had to be employed using unskilled or low skilled labour and another example from the JU288 was that it was built using an automatic riveting machine rather than by hand.[23] Consequently, it is estimated that output per head increased by 60% in the arms industry between 1942 and 1944.[24] The rationalisation demanded by Hitler in December 1941 coincided with the first reversals of Operation Barbarossa. The Wehrmacht was not just unprepared for the Russian winter but also supported by poor logistics. This period is seen as an early turning point in the war, so it can be argued that these reforms were too late to make a big difference to the German war effort. Finally, this Rationalisation effort was undone with the Allied bombing campaigns of 1943 and 1944 which devastated manufacturing capacity and forced some production into small plants and underground.[25] Even if the German economy had all the natural resources and labour that it required, the serious inefficiencies in the manufacturing sectors would ensure that the economy would never be effective enough to win the war.

Assessing the effectiveness of a war economy such as Germany is a subjective judgment where performance can be compared against many criteria. These can include the capacity to produce weapons at the right time, quantity, price and quality, or the population to buy into the concept of "Total War". For "Total War" it is the effectiveness of the whole economy to provide the capability to fight a war, not just the strategically important sectors. To judge the success or failure of the German war economy it must be compared to the economic effectiveness and performance of its adversaries, the USA and Russia. The relative effectiveness of these three economies was not just down to their different ideologies; the US Free Market versus Russia's Command economy versus Germany's Mixed economy; Russia and the US mobilised in different ways but were equally successful. They also collaborated on production techniques to improve their collective effectiveness. Only at the start of the war did the US turn its manufacturing base over to arms production with the car manufacturers building tanks instead of cars and the shipyards building warships; Ford, General Motors and Chrysler using the latest mass production techniques driven by the profit motive with a well-paid, motivated workforce. In four years the industrial production of the US doubled which drove a prosperous post

[20] R Overy, *War and economy in the Third Reich* (USA, Oxford University Press, 1994), p 345
[21] Ibid., p 358
[22] Ibid., p 367
[23] Ibid., p 363
[24] Ibid., p 367
[25] R Overy, *Why the allies won*, (London, Pimlico, 2006), p 251

war economy. The Russian workers were motivated by survival rather than personal wealth and performed astonishing feats to protect its manufacturing base. When under threat of defeat by Germany the manufacturing capability was relocated thousands of miles from the fighting and continued to produce vast quantities of guns, planes and tanks. With Russian central planning, the output of each worker in the soviet war industry increased two or three-fold during the war.[26] The Russian people made huge sacrifices for the war effort to achieve victory.

In a war of economies, Germany was ultimately up against two bigger enemies. Germany was rearming over a longer period than the Allies, particularly the USA mobilised their economies quickly to produce vast volumes of military equipment. They were prepared to take short term defeats on the battlefield confident that their larger economies would prevail in the long term. Germany couldn't match these two economies because they both had almost unlimited output but also because they were located thousands of miles away from the conflict, Germany had to manufacture whilst under attack on home territory. Despite early success Germany was bogged down in a long war that the economy was not capable of supporting. As an example of how the economy could not produce what was required for victory, by 1941, Doenitz did not have the 300 operational U-boats that he needed, and was expecting to be delivered, to win the Battle of the Atlantic.[27] Germany only had a Blitzkrieg economy to support a Blitzkrieg military strategy. There was muddled German economic and military thinking. The Four-year plan was fatally flawed, it was risky, because it assumed the war had to be short and every part of the plan had to be successful for it all to succeed. Due to end in 1940, the plan did not complete, if it had, the economy would have been greater mobilised for a war that should have been planned for after 1940, but the real industrial reforms did not start until 1942 and become effective until 1944 when Germany was facing defeat.

Hitler feared the economic power of the US "Wall Street Jewry" and the influence of the "Jewish Media".[28] Naziism took the destruction of European Jewry as its central objective, an objective apparently devoid of any economic rationale,[29] "Germany couldn't settle to be a satellite of the United States, this would have meant enslavement to the World Jewish conspiracy and ultimately race death".[30] Hitler was overtaken by his fascist ideology rather than continuing economic preparation, he "lost control of his policies" when going to war in 1939. A war not only of military strength but ideology, of economy, economics, and production that Germany couldn't win. Ultimately, Germany did not mobilise its huge economy effectively; industry resisted modernisation and was not turned over to full rationalised war production until it was too late, it didn't motivate the whole population to make the same sacrifices as the Russians and didn't provide the US profit function for industry. Defeat on the battlefield was heavily influenced by Allied economic policy, industrial standardisation and innovation of weaponry.

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[26] R Overy, *War and economy in the Third Reich* (New York, Oxford University Press, 1994), p 228
[27] M Hastings, *All hell let loose*, (London, Harper Collins, 2011), P 274
[28] A Tooze, *The Wages of Destruction*, (London, Penguin Group, 2006), introduction p xxvi
[29] Ibid., introduction p xx
[30] Ibid., introduction p xxvi