

# **A Re-Assessment of Italian Defence Production and Military Performance in the World Wars**

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The intellectual aspiration of this article is to compare and assess the efficiency of military mobilization of Italy during World Wars I and II. The task seems *prima facie* futile. One can argue that during World War I Italy emerged as a great victor, master of the Adriatic and an important regional power in Eastern and South-Eastern Europe. The opposite occurred in World War II, when the country suffered an immense military defeat.

In the eyes of many historians, economists, political scientists, etc., the contrast between Italian victory in World War I and defeat in World War II is to be associated with different systems of alliance. However, a more careful assessment, involving a search for other possible factors, is needed. One such factor may reside in the fact that in the two world wars the country experienced different economic systems (capitalism vs. quasi central fascist planning). This writer argues, based on the abundant literature on the subject, that while defeat in World War II was certainly catastrophic; victory in World War I was pyrrhic, and that economic organization and management played a major role in both cases.

This article is organized into three sections. The first analyzes the transformation of the Italian economy and industry before and during World War I, and hypothesizes a nexus between economic and military developments in the war theatres. The second section follows the same route as regards World War II. The third probes the ideological rationale behind the mobilization efforts of 1915-1918 and 1940-1943. Conclusions follow.

## **Literature Review I: The Italian Economic, Industrial and Military Mobilization before and during World War I**

Before World War I Italy had immense regional economic differences. The northern parts of the country were industrialized whereas the south was predominantly agricultural. Up until the 1880s, France had been a provider of aid to the new nation; when in 1881 the French occupied Tunisia, however, Italy reacted negatively, and a trade war occurred between the two States. Faced with Italian tariffs on French imported goods, France retaliated with tariffs of its own, and Italian agricultural exports to France collapsed. These developments stifled the economy of southern Italy and forced many of its natives to migrate to the US. The economic evolution of the north was different. There, rapid industrialization was underway with the development of both labour- and capital-intensive industries (textiles, car manufacturing, iron and steel, shipyards, telecommunications). Gradually, the North (the Milan-Turin-Genoa triangle) became an important economic centre. The Italian GNP increased at an average annual rate of 3-4% and fixed capital investments increased by the astonishing annual figure of 14%.<sup>1</sup> To illustrate, the Gross

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<sup>1</sup> See : (1) Kennedy, 1988, pp.261-265 ; (2) Cameron, 1997, pp.265-267 ; (3) Galassi & Harrison, 2005 ; (4) Cohen & Federico, 2001.

National Product increased from 61 billion lire in 1895 to 92 billion in 1911-15 (in constant 1938 prices). Per capita income increased from 1,888 lire in 1891-1895 to 2,478 lire 20 years later. The value of industrial production increased from 11.2 billion lire in 1896 to 20.6 billion in 1908 and to 22.1 billion by 1913 (again in constant 1938 prices). Between 1896 and 1908 the iron and steel industry sector increased at an average annual pace of 12.4%, the machinery industry had an average annual growth rate of 12.2% while the chemical industry's stood at 13.7%.<sup>2</sup> The scale of industrial transformation was staggering: whereas there were only 9,000 factories in 1861, by 1900 that number had increased to 117,000, and by 1914 the reckoning was 188,000 industrial plants.<sup>3</sup>

Italy was dependent on imported energy since 88% of its coal needs were covered from British imports. This industrial/energy deficit forced the country to develop alternative energy sources. Electrical trams were introduced in 1893. At that time Milan was the second city in the world with electric street illumination. In 1898, Italy produced 50,000 KW of electric energy, by 1911 the figure was almost 500,000 KW and by 1914 it was one million KW, of which 90% were used by industry. Total electricity consumption increased from 100,000,000 KW in 1898 to 2,575,000,000 KW in 1914.<sup>4</sup>

Iron production increased from 20,000 tons in 1900 to 430,000 in 1913. Steel production increased from 140,000 to 930,000 tons over the same period.<sup>5</sup>

In 1899 one of the biggest automobile plants was established by former cavalry officers and a few entrepreneurs under the name FIAT (Fabbrica Italiana Automobili Torino). By 1911 the company produced cars, lorries and airplanes. Another section of FIAT produced the Revelli-type machine-gun, as well as lorries for the Army. A second important defence factory was that of OTO MELARA, established in 1905 in La Spezia, which mainly produced naval guns. Starting in 1911, Olivetti manufactured typewriters and other telecommunication equipment.<sup>6</sup> The Army had its own industrial plants for small arms in Turin, Naples and Terni, whose primary shareholder was the French iron, steel and armament company Schneider. Over the 1905-1912 period, the orders from the Italian Army reached the level of 507,000,000 lire.<sup>7</sup> Other defence-related industries such as textile plants and shipyards grew apace.<sup>8</sup> The naval construction industry counted four State and five private shipyards.<sup>9</sup>

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<sup>2</sup> Clark, 1996, p.119.

<sup>3</sup> Stone, 2002, p.189.

<sup>4</sup> *Ibid.*

<sup>5</sup> Clark, 1996, *op.cit.*, pp.120 and 123.

<sup>6</sup> Stone, *op.cit.*, 2002, p.189.

<sup>7</sup> Stevenson, 2000, p.33.

<sup>8</sup> Clark, 1996, *op.cit.*, pp.124-127.

<sup>9</sup> The State shipyards were situated in Venice (unknown production level), La Spezia (which constructed 14 warships during the 1871-1914 period), Taranta (a naval supply shipyard, with unknown production levels), and Castellammare in Naples (also a naval supply shipyard, which during the 1902-1913 period built 5 warships). The private shipyards were in Genoa (more than 30 ships constructed before 1914), Riva Trigoso, (unknown production), Muggiano (which mainly produced commercial ships), Livorno (30 warships constructed over the 1871-1914 period), and Naples (unknown production level).

The aircraft industry consisted of firms such as Breda, Caproni, and most importantly FIAT, the main supplier of airplanes during the war.<sup>10</sup> Railways experienced strong growth as well. In 1905-1908, an order for 1,000 new engines, 25,000 cargo wagons and 3,000 passenger wagons was honoured. State investments increased from 61 million lire in 1901 to 123 million in 1908 and 465 million by 1912.<sup>11</sup> However, political and industrial unrest made this development process slower than intended throughout the 1900-1911 period. In 1900, the king was assassinated by anarchists. The same year 1,700 strikes occurred, and continued unabated throughout the following decade (1901 = 1,671 ; 1902 = 1,042 ; 1906 = 1,649 ; 1907 = 1,891 ; 1908 = 1,474 ; 1911 = 1,255).<sup>12</sup>

In 1900, Italy had a small commercial fleet (945,000 tons), whose share of global shipbuilding production was a mere 2.5%. Its foreign trade was the lowest in Europe (£132.9 million). On the eve of the First World War, its iron and steel industrial output was the 1/8<sup>th</sup> of the British and the 1/17<sup>th</sup> of the German production, respectively.<sup>13</sup> Internal tensions were high not only because of an uneven income distribution but also because of the North-South dichotomy. Comparative defence expenditure was as follows :

**Table 1 :** Defence Spending of Great Powers (constant prices in million £, 1894-1913)

Year	Britain	France	Russia	Italy	Germany	Austria
1894	33.4	37.6	85.8	14.0	36.2	9.6
1900	133.0	48.5	54.2	16.0		21.2
1901	137.0	49.0	55.2	16.8	72.9	23.4
1902	111.8	47.1	58.6	16.8	70.5	24.1
1903	79.3	45.9	63.8	15.9	69.4	24.2
1904	71.7	45.5	150.0	15.8	71.4	24.5
1905	67.6	45.4	205.6	16.4	73.6	23.4
1906	63.7	47.4	122.8	16.0	76.4	23.4
1907	61.6	53.6	75.6	16.4	90.7	23.4
1908	63.4	50.9	77.5	17.3	81.4	27.4
1909	67.0	48.9	73.7	19.7	86.7	34.5
1910	70.6	54.9	74.0	20.5	94.2	29.8
1911	72.6	57.1	74.0	23.1	88.0	27.5
1912	72.5	60.4	88.0	29.9	87.2	32.3
1913	75.7	65.9	101.8	39.6	117.8	42.4
<b>Total</b>	<b>1,180.9</b>	<b>758.1</b>	<b>1,360.6</b>	<b>294.2</b>	<b>1,080.2*</b>	<b>391.1</b>

**Sources:** (1) Stevenson, 2000, *op.cit.*, p.4 ; (2) Ferguson, 1998, p.106. The figures are calculated based on the following exchange rates: £1=25.221 lire = 20.429 RM = 9.45 rubles = 24.02 Austrian Kronen = 25.22 FF. \* For the period 1901-1913.

The data in Table 1 show that Italy had the lowest defence spending among the major European powers. This was reflected in its armed forces. During the 1880-1888 period, the Navy gave priority to the construction of torpedo boats. In the 1890s, the doctrine changed, so that between 1893 and 1904 8 cruisers were constructed. The first two were of the *Ammiraglio di Saint Bon* class with a tonnage of 10,080 tons. Another two were of the *Regina Margherita* class with a tonnage of 13,215 tons, and the remaining four

<sup>10</sup> On shipyards, see : Winklareth, 2000 ; on aeronautical industries : Jackson, 2002.

<sup>11</sup> Stone, *op.cit.*, 2002, p.199.

<sup>12</sup> *Ibid.*, p.195.

<sup>13</sup> Kennedy, 1988, *op.cit.*, p.263.

were of the *Regina Elena* class with a tonnage of 12,550 tons.<sup>14</sup> The Italian Navy considered the Austro-Hungarian fleet as its main threat; however, the financial resources allocated were limited.<sup>15</sup> In 1905, Italy had 18 pre-dreadnought battleships (including the ships under construction), 6 armoured cruisers ; by 1907 4 more cruisers entered service. After 1909 the Navy started the construction of 4 dreadnought battleships, which it aimed to increase to 6 by 1915.<sup>16</sup> The first Italian dreadnought was the *Dante Alighieri* with 12 12-inch guns and a tonnage of 19,550 tons. Three more were built; these were of the *Cavour* class, equipped with 13 12-inch guns. In 1912 two more dreadnoughts of 22,960 tons were made: the *Andrea Doria* and the *Duilio*. By October 1914 four more (*Caracciolo* class, 31,400 tons) were constructed. These however were never operational.<sup>17</sup>

As regards the Army, Italy during the 1871-1882 period copied the German model. In 1880 it had 12 corps amounting to a total strength of 190,000 men. When the country entered the war in 1915, the Army had 618 machine guns where the Austro-Hungarians initially deployed 1,500. This figure includes those in Libya, and many of them were non-operational.<sup>18</sup> The artillery had a shortage of 639 guns since a 1907 order for 1,500 artillery pieces to the German armaments firm Krupp was not fully honoured as deliveries were stopped not because of the war but primarily because many Italian officers had been accused of corruption. In 1911-1915, the Army attempted to increase the domestic production of guns, with only limited results. Thus by 1915 the Italians were using the old 75a Model which was inferior to the German guns.<sup>19</sup> During the war Italy established 69 infantry divisions (plus 3 more in reserve), one Alpine and 4 cavalry divisions.<sup>20</sup> (The Italian contribution compared to other States is shown in Table 2, next page).

It appears from the data in Table 2 that the new Entente members contributed 161 infantry divisions during the war and that of those 73 were Italian (45.34%). This is an immense contribution if one considers the demographic strength of the State (35 million population). Tables 3 and 4 (page 6 *infra*) present data on the industrial mobilization of the 1915-1918 period.

The aim of the defence industry was to maximize the production volume. When Italy entered the war a special division for “Arms and Ammunition” was established in the War Ministry under the directorship of General Alfredo Dallolio. In December 1917 there were 3,500 ammunition factories, as against 125 in 1915.<sup>21</sup> At central government level during the war, 2,865 contracts related to armaments procurement were approved. At regional level 24,516 more contracts were signed, but on many occasions one contract was

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<sup>14</sup> Sondhaus, 2001, p.184.

<sup>15</sup> Strachan, 2001, p.377. On the Army and Navy budgets, see: Stevenson, 2000, pp.7-8.

<sup>16</sup> Italian planning in 1913 envisioned a Navy 60% of the size of the French navy, enjoying a 4:3 superiority over the Austro-Hungarian Navy. See: Halpern, 1994, p.13.

<sup>17</sup> Sondhaus, 2001, *op.cit.*, pp.209-213.

<sup>18</sup> Galassi & Harrison, 2005, *op.cit.*, p.279.

<sup>19</sup> Stevenson, 2000, *op.cit.*, pp.228-229.

<sup>20</sup> Ellis & Cox, 2001, *op.cit.*, pp.127-129 and 203-204.

<sup>21</sup> Gray & Argyle, vol. II, 1991, *op.cit.*, p.119.

made in multiple copies with different prices, and some did not even have written authorization. In May 1918, Gen. Dallolio resigned due to multiple accusations of corruption.<sup>22</sup>

**Table 2 :** Comparative Contributions to the War Effort, 1914-1918

Country	Population (millions)	Initial Army strength (000s)	Army strength after mobilization (000s)	Total Mobilization 1914-1918 (000s)	Total Infantry Divisions 1914-1918	Total Cavalry Divisions 1914-1918
USA	92,0	208	—	4,335	43	
<b>Italy</b>	<b>35,0</b>	<b>310</b>	<b>875</b>	<b>5,903</b>	<b>73</b>	<b>4</b>
Japan	67,2	240	—	800	1	
Romania	7,51	100	564	—	25	2
Greece	4,8	115	150	280	11	
Portugal	6,0	32	150	200	8	1

Source: Ellis & Cox, 2001, pp.245-246.

Harvey (1994) provides the following arms production figures: 12,021 airplanes, 23,979 airplane engines, 16,000 artillery guns, 70,000,000 shells, 36,567 heavy machine guns. The production of shells required 1,667,000 tons of steel, 411,000 tons of cast-iron, 21,000 tons of copper and 1,889,000 tons of coal.<sup>23</sup> Galassi and Harrison (2005, *op.cit.*, p.289) provide the following aggregate data for the 1915-1918 period: 69,835,000 shells, 2,598,000 rifles, 3,616,000,000 bullets, 12,021 aeroplanes, 24,400 aeroplane engines, 572 naval ships, 71 submarines. The figure for ships is not verified by other sources which provide different data. Thus Ellis and Cox (2001, *op.cit.*, pp.275 and 288) provide the estimate of 159 ships constructed, of which 33 were lost. According to this source, construction was five times the size of losses. Whatever the real size of the naval production, this was a waste of resources since the role of the Navy was marginal.

Turning to related and supporting industries, coal production increased, iron remained constant and electrical energy production doubled.<sup>24</sup> The war changed the structure of the Italian industry since some heavy (capital-intensive) industries benefited more than labour-intensive industries. To illustrate, while the net profits of FIAT during the 1910-1914 period were 8% of the invested capital, by 1919 that figure rose to 30%. In the chemical and steel industries,<sup>25</sup> net profits respectively increased from 8% to 15% and from 6.3% to 16.5%.<sup>26</sup>

<sup>22</sup> For typical examples of corruption, see : Gray & Argyle, 1991, p.127.

<sup>23</sup> Cf. Harvey, 1994, pp.274 and 276

<sup>24</sup> Demand for coal was higher than supply. Britain sent immense quantities (in August 1918 alone Britain sent 690,000 tons) but the demand was so high that it could not be satisfied; thus in August 1918 75% of trains were forced to stop their movements whereas the remaining 25% continued by burning wood. Cf. Gray & Argyle, vol. II, *op.cit.*, p.83.

<sup>25</sup> The Italian chemical industry produced 6,300 tons of chemical gas during the war for the Army.

<sup>26</sup> Galassi & Harrison, 2005, pp.276-309, especially p.293.

**Table 3 : Total Defence Production in Italy, 1915-1918**

	<b>1914</b>	<b>1915</b>	<b>1916</b>	<b>1917</b>	<b>1918</b>	<b>Total</b>
Aircraft		382	1,255	3,861 (3,871)	6,488 (6,523)	<b>11,986</b> <b>(12,000)</b> <b>(13,454)</b>
Aircraft engines		606	2,678	6,276	14,840 (14,820)	<b>24,400</b> <b>24,380</b>
Tanks						<b>6</b>
Artillery guns						<b>11,789</b> <b>(12,000)</b>
Mortars						
Machine guns		300 (25 per month)			14,400 (1,200 per month)	<b>31,030</b> <b>(37,000)</b>
Total light arms						<b>24,230,000</b>
Grenades	-	-	-	-	-	<b>7,300,000</b>
Shells		10,400 per day			88,400 per day	<b>69,835,000</b> <b>(79,000,000)</b>
Trucks	4,500				25,000	
Bullets						<b>3,616,000,000</b>
Cars	9,200				20,000	
Commercial ships (in tons)	40,000	20,000	60,000	40,000	60,000	<b>220,000</b>

**Sources :** (1) Galassi, 2002, p.21 ; (2) Ellis & Cox, 2001, *op.cit.*, pp.286-288 ; (3) Strachan, 2001, pp.1,049-1,113 ; (4) Clark, 1996, *op.cit.*, pp.186-188 ; (5) Gray & Argyle, 1991, pp.288-297 ; (6) Ceva, 2005, p.460 (the book provides information for both world wars).

**Table 4 : Production of Raw Materials (in metric tons)**

	<b>1913</b>	<b>1914</b>	<b>1915</b>	<b>1916</b>	<b>1917</b>	<b>1918</b>	<b>1919</b>
<b>Coal</b>	701,000	781,000	953,000	1,306,000	1,722,000	2,171,000	1,158,000
<b>Cast-Iron</b>	427,000	385,000	378,000	467,000	471,000	314,000	240,000
<b>Iron</b>	603,000	706,000	680,000	942,000	994,000	694,000	613,000
<b>Steel</b>	934,000	911,000	1,009,000	1,269,000	1,332,000	933,000	732,000
<b>Electricity</b>	2.0 GWh	2.2 GWh	2.58 GWh	2.93 GWh	3.43 GWh	4.0 GWh	4.3 GWh

**Source :** Gray & Argyle, 1991, *op.cit.*, pp.294-295.

### The Industrial-Military Mobilization Nexus

The Italian mobilization effort was inadequate and this soon became apparent on the front lines. In 1915, the outcome of the four initial battles the Army fought at Isonzo was catastrophic. Italian casualties between June and December that year were 177,000 men, as against 117,000 men on the Austrian side.<sup>27</sup> In 1916, the Italians made five more attempts in the same location. The fifth to ninth battles of Isonzo added 132,600 casualties for the Italians (plus 65,000 prisoners), though this time Austrian losses (144,500 men and 2,000 prisoners) were very similar.<sup>28</sup> In 1917, the Italians made two more efforts at Isonzo. The tenth battle occurred between May and June: casualties (159,000 men, including 36,000 killed, were out of the fight) were again immense, while Austrian losses (67,500,

<sup>27</sup> Tucker, 1998, p.73.

<sup>28</sup> See : (1) Ellis & Cox, 2001, *op.cit.*, pp.51 and 273 ; (2) Tucker, 1998, *op.cit.*, p.115.



with only 7,300 dead) were distinctly less.<sup>29</sup> On August 19<sup>th</sup>, 1917 the Italians made the eleventh attempt. By November 9<sup>th</sup>, after an initial Italian success, the battle took another catastrophic turn as 37,000 Italian soldiers died, 91,000 were wounded, 350,000 made prisoners, along with captures materiel amounting to 3,152 artillery guns, 1,732 mortars, 3,000 machine-guns, 2,000 sub-machine guns, and more than 300,000 rifles. The Austrian losses were just 20,400 men (only 2,400 dead) and the Germans lost 15,000 men.<sup>30</sup> Thus by the end of 1917 Italy was on the verge of collapsing. In 1918, however, it switched to a defensive strategy which allowed it to regroup and repulse a major Austrian offensive in July. In that battle (Piava, 15-25 June 1918), the Italian artillery used 3,525,738 shells.<sup>31</sup> After that development, the tactical initiative was on the Italian side. For a final attack, it gathered 57 infantry divisions, 4 cavalry divisions, 7,720 guns with 6 million shells and 600 airplanes, while the Austrian side deployed 60.5 divisions, 6,145 guns and 564 airplanes. A total of 2.2 million men in the Allied camp were facing 1.8 million Austrians. The outcome of the Vittorio Veneto battle was a triumph for Italy. The Austrians had 30,000 dead, 427,000 prisoners and the Italian army also took 5,000 artillery guns. The total allied losses were 41,000 men (of whom 38,000 were Italians).<sup>32</sup>

On October 30, Austria-Hungary asked for an armistice. Although the Italian war effort seemed vindicated, the reality was different. During the 1915-1917 period, the Army had failed to score a single victory, and by the end of 1917 the country was almost defeated. It was saved by a change of tactics, a huge amount of British and French aid – and by the ultimate disintegration of the multi-ethnic Austro-Hungarian Army.

## **Literature Review II: The Italian Economic, Industrial and Military Mobilization before and during World War II**

Although victorious in 1918, Italy had immense economic problems after the war. In 1920, the primary sector of the economy generated 40% of its GNP and provided employment for 50% of the labour force.<sup>33</sup> Although industrial transformation had favoured the heavy industries, the Italian secondary sector was uncompetitive to the extent that only substantial government funding allowed it to survive. However, the post-war debt was extremely high and the Italian lire depreciated against the other major currencies. To illustrate, the exchange rate with the US dollar went down from \$1=LL148.7 in 1918, to \$1=LL183.7 in 1919, and \$1=LL401.3 in 1920. The exchange rate between sterling and the lire was £1= LL145.4 in 1918, 160.6 in 1919 and 299.6 in 1920.<sup>34</sup>

The economic crisis translated into widespread industrial, social and political conflict: by September 1920, 500,000 steel workers occupied the factories, and by 1922 the Fascist movement of Benito Mussolini was in power.

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<sup>29</sup> Ellis & Cox, 2001, *op.cit.*, p.273.

<sup>30</sup> Ellis & Cox, 2001, *op.cit.*, pp.51 and 273 ; Tucker, 1998, *op.cit.*, pp.146-147.

<sup>31</sup> Harvey, 1994, *op.cit.*, p.274.

<sup>32</sup> Tucker, 1998, *op.cit.*, p.172 ; Ellis & Cox, 2001, *op.cit.*, p.249 ; Herwig, 1997, p.435.

<sup>33</sup> Kennedy, 1988, *op.cit.*, p.378.

<sup>34</sup> Galassi, 2002, p.39.

In the primary sector Mussolini declared the “Battle of Wheat”, aiming to achieve self-reliance in food, while in the secondary sector he launched the so-called “GNP Battle” aiming to increase industrial production and productivity and reduce imports of foreign products.<sup>35</sup> The index of industrial production increased. Thus, based on 1938=100, the index increased from 54 in 1921 to 83 in 1925. During the period 1922-1926 exports increased and by 1929 the country achieved autarchy in steel and chemicals. The production of steel increased from 982,000 tons in 1922 to 2,122,000 tons by 1929.<sup>36</sup> The production of pharmaceutical goods, radios, telephones, wood products, food products also increased.<sup>37</sup> However, in relative terms the industry was still in infancy. Thus in 1938 the Italian industrial production represented only 2.8% of global industrial output and the country was dependent on imports of coal, oil, iron, copper and fertilizers from Britain and France.<sup>38</sup> The invasion in Abyssinia and the economic sanctions imposed by the League of Nations as a result forced a new trade pattern. Thus after 1936 the ratio of Italian exports to Germany and Africa increased while exports to France and Britain declined. In addition, “Autarchy” became a governing principle in the economy.<sup>39</sup> Cameron (1997) points out that the Fascists established the economic notion of the “entrepreneur State”. This in theory was a blend of capitalism and socialism. According to this model, private initiative was allowed to survive as long as the interests of workers, managers and shareholders did not contradict the general interests of both State and society. In return, the State was turned into a guarantor of social order and progress.<sup>40</sup>

As a result of such developments, defence spending increased in the 1930s :

**Table 5** : Defence Spending 1934-1940 (in million lire)

Fiscal Year	Army	Navy	Air Force	Total
1934-1935	2,639	1,310	810	<b>4,759</b>
1935-1936	7,093	2,850	2,241	<b>12,184</b>
1936-1937	9,050	3,423	3,628	<b>16,101</b>
1937-1938	5,794	2,970	3,923	<b>12,687</b>
1938-1939	6,685	3,429	4,296	<b>14,410</b>
1939-1940	14,868	5,206	6,944	<b>27,018</b>

**Source** : Mallet, 1998, p.60. According to a different source (Dear & Foot, eds., 2001, *op.cit.*, p.460), the total defence spending during the 1935-1940 period was 116 billion lire and of that amount 77 billion were used to finance the occupation of Albania and Abyssinia.

Table 5 shows that after 1936 the country followed the German rationale which made the Air Force the second most important force and the Navy the third. The apparent increases were associated with the war in Abyssinia and with the Italian involvement in the Spanish civil war.<sup>41</sup> Thus most of these increases were absorbed by high logistic support

<sup>35</sup> See : (1) Clark, 1996, *op.cit.*, pp.269-270; (2) Duggan, 2002, p.214.

<sup>36</sup> Clark, 1996, *op.cit.*, p.264.

<sup>37</sup> Duggan, 2002, *op.cit.*, p.220.

<sup>38</sup> Clark, 1996, *op.cit.*, p.267 ; Kennedy, 1988, *op.cit.*, p.379.

<sup>39</sup> Clark, 1996, *op.cit.*, p.266.

<sup>40</sup> Cameron, 1997, p.362.

<sup>41</sup> Against Abyssinia Italy mobilized 200,000 men (plus 65,000 Askari and 10,000 Dubat local volunteers), 25,000 horses, 4,200 vehicles, 600 artillery guns, 500 ships, 120 tanks and 120 airplanes. It took control of 50 million hectares of Abyssinian land, of which only 120,000 were cultivated. Cf. Garibaldi, 2002, pp.100-101.



requirements and in practice did not enhance the fighting capacity of the armed forces. Even worse, when the Italian defence budget is compared with those of the other major powers of the day, the following (unfavourable) picture emerges :

**Table 6** : Defence Spending of Great Powers, 1930-1938 (in million \$, current prices)

Year	Britain	France	USSR	USA	Germany	Italy	Japan
1930	512	498	722	699	162	266	218
1933	333 (500)	524 (805)	707 (303)	570 (792)	452 (620)	351 (361)	183 (356) (387)
1934	540 (558)	707 (731)	3,479 (980)	803 (708)	709 (914)	455 (427)	292 (384) (427)
1935	646 (671)	867 (849)	5,517 (1,607)	806 (933)	1,607 (2,025)	966 (966)	300 (900) (463)
1936	892 (911)	995 (980)	2,933 (2,903)	932 (1,119)	2,332 (3,266)	1,149 (1,252)	313 (440) (488)
1937	1,245 (1,283)	890 (862)	3,446 (3,430)	1,032 (1,079)	3,298 (4,769)	1,235 (1,015)	940 (1,621) (1,064)
1938	1,863 (1,915)	919 (1,014)	5,429 (4,527)	1,131 (1,131)	7,415 (5,807)	746 (818)	1,740 (2,489) (1,706)

**Sources** : Kennedy, 1988, p.382. Numbers in brackets are different estimates. For additional data see : (1) Milward, 1965, p.7 ; (2) Milward, 1977, pp.25 and 47.

The data in Table 6 demonstrate that the Italian defence spending was the lowest among the Great Powers by the end of the 1930s. Not only was the volume of expenditure lower, but also the rate of increase was far below average. According to one source, during the 1934-1938 period, while Italy's armaments expenditure rose by 56%, Germany's rate of increase was 470%, Japan's 455%, the USSR's 370%, and Britain's 250%. Only France, with 41%, fared worse. The corresponding rates for smaller states were mostly higher than Italy's: Austria: 112%, Czechoslovakia: 130%, Poland: 56%, Hungary: 47%, Denmark: 115%, Netherlands: 92%, Canada: 55%, New Zealand: 172%, South Africa: 140% and Australia: 123%.<sup>42</sup> If spending on new armaments is one of the most crucial parts of overall defence expenditure and military performance, then Italy was certainly not the most ambitious among the various States on the world scene. The Italian Army (Regia Esercito) had very old rifles, and grenades which did little damage. A majority of its artillery guns were from the First World War and the monthly production of 70 pieces was inadequate. By 1939 there were 1,500 (according to other estimates 1,660) tanks but the majority were light FIAT L-3 type which weighed 3 tons when the German designs weighed 20 tons. Only 70 tanks were in a position to apply the blitzkrieg tactical doctrine and would perform efficiently in the African high temperatures. The remaining tanks could not even function adequately in military manoeuvres. There were 53,000 vehicles, including medical rescue team cars, but of those only 25,000 were modern (built during the 1934-

<sup>42</sup> See: Milward, 1977, pp.25 and 47.

1939 period). The number of vehicles compared poorly with the Belgian (90,000), British (85,000) and German (500,000) armies. The uniforms were unacceptable.<sup>43</sup>

When it comes to human resources, Ellis (1995) reports that total Army strength was 1,630,000 men. There were 73 divisions but only 20 were highly trained and combat-ready, and of those 4 were in Libya.<sup>44</sup> As regards the Navy (Regia Marina), Ellis (1995) places its strength at 168,600 men, with 2 battleships, 22 cruisers, 59 destroyers, and 115 submarines. However, a major weakness resided in the shortage of aircraft carriers and radar systems. In addition, its submarines had technical problems: they did poorly in diving and the quality of ventilation air was so very poor that in some cases sailors died from poisons.<sup>45</sup> According to Ellis (1995), the Air Force (Regia Aeronautica) had 1,770 aircraft in Italy, 300 in Libya and another 300 in Italian East Africa, and a total strength of 101,000 men. Clark (1994) mentions 1,369 aircraft (191 fighters, 647 bombers of 19 different types). However, the quality and speed of Italian airplanes were low. The Italian Air Force did not endorse the ideas of Italian strategic thinker Giulio Douhet (1869-1930) who had pointed out that strategic bombing could be effective in breaking the enemy's morale and force it to surrender.<sup>46</sup>

It is obvious that when Italy entered the war, in spite of their quantitative strength, the Italian armed forces suffered from poor quality systems, limited logistic support, insufficient training of personnel and an inadequate industrial infrastructure which could support the military apparatus. In addition there was an oil supply problem as well. Turning to the war years (1940-1943), the existing literature is dichotomized. Thus some studies point out that the defeat was the outcome of limited raw materials, whereas others hold that it was the outcome of low qualitative and quantitative procurement.

### The Industrial-Military Mobilization Nexus

The first study which attempted to analyze Italy's defeat was that of Favagrossa (1946). This study contends that the shortages in raw materials and oil were catastrophic and did not allow tactical as well as strategic goals of the Armed Forces to be achieved:

**Table 7** : Demand and Supply of Raw Materials (in tons)

	Annual Demand in War Period	Domestic production in War Period	Required Imports	Real average imports in War Period
Coal	16,500,000	2,200,000	14,300,000	11,600,000
Fuel	8,500,000	120,000	8,380,000	1,100,000
Steel	4,800,000	2,400,000	2,400,000	800,000
Aluminium	65,000	32,000	33,000	5,000
Copper	160,000	1,000	159,000	30,000
Rubber	22,000	–	22,000	14,000

Source: Favagrossa, 1946, p.97.

<sup>43</sup> See: (1) Clark, 1996, p.287 ; (2) Nicholls & Washington (eds.), 1990, p.25.

<sup>44</sup> See : (1) Clark., 1996, *op.cit.*, p.287 ; (2) Anonymous, 1982, pp.76-87 ; (3) Ellis, 1995, p.228.

<sup>45</sup> Cf. (1) Ellis, 1995, *op.cit.*, pp.228 and 245 ; (2) Clark, 1996, *op.cit.*, p.287 ; (3) Kennedy, 1988, p. 380. An excellent source for the Navy is Mallet, 1998.

<sup>46</sup> These data refer to first-line aircraft. See : (1) Ellis, 1995, *op.cit.*, pp.228 and 232 ; (2) Clark, 1996, *op.cit.*, p.288 ; (3) Trew & Sheffield, 2000, p.98. On Italian airplanes, see Jackson, 2002.

The second study is that of Ranki (1993).<sup>47</sup> It points out that due to limited domestic raw materials and imports from Germany, the index of industrial production fell from 100 in 1939 and 101 in 1940, to 93 in 1941, 81 in 1943, and 63 in 1943. The oil shortage was immense. Thus, imports fell from 2 million tons in 1939, to 1.2 m in 1940, to only 400,000 in 1941 and 500,000 tons by 1942.<sup>48</sup> The collapse in the raw material supply crippled the defence industry which, in 1939, accounted for 15% of total industrial production. Between 1938 and 1942, the huge sum of 26 billion lire was invested in heavy industry, and the machine tool industry expanded by 50%. The defence industry absorbed 65% of total defence spending, which in 1940 amounted to 59% of total government spending. However, the shortage of raw materials was devastating. Thus, the construction of ships in 1943 was only 15% of the pre-war production. The production of airplanes and tanks was also low due to steel shortages. The production of aircraft at the beginning of the war was just 3,000 and that of tanks 1,500. The defence industry only employed 150,000 workers, a very low figure compared to that of other States.<sup>49</sup> The Italian GNP was reduced from 176.8 billion in 1939 to 175 billion in 1940, to 173.6 billion in 1941, to 169.8 billion in 1942, to 150.8 billion in 1943 to 120.1 billion lire in 1944.<sup>50</sup>

Another important study is that of Bigazzi (1994),<sup>51</sup> which provides data on the defence production of specific Italian industries (tables 8, 9, 10, 11) :

**Table 8 : Production at FIAT Plants**

	1938	1939	1940	1941	1942	1943	1944	1945
Workers	44,902	48,359	52,321	54,793	55,857	54,406	53,593	53,313
Aircraft	429	396	655	799	518	250	123	5
Trucks	4,670	2,843	10,629	12,548	10,164	8,300	4,476	3,260
Cars	51,383	52,978	23,502	13,799	11,236	7,386	3,435	3,696
Iron & Steel (tons)	152,447	150,218	154,517	149,243	139,202	106,858	70,373	32,728

Source: Bigazzi, 1994, pp.182-210, especially pp.184-185.

**Table 9 : Production at LANCIA Plants**

	1938	1939	1940	1941	1942	1943	1944	1945
Workers*	4,700	4,808	5,412	5,385	6,225	6,040	5,878	5,806
Cars	6,432	4,758	3,899	2,449	988	160	17	88
Trucks	237	1,566	3,033	3,390	1,894	1,438	2,111	1,039
Production index	100	100.5	143.5	139.0	76.0	50.9	72.1	35.1

Source : Bigazzi, 1994, same pages. \* : in Turin factory alone.

<sup>47</sup> Ranki, 1993, pp.239-245.

<sup>48</sup> *Ibid.*, pp.240-242.

<sup>49</sup> *Ibid.*, p.243.

<sup>50</sup> *Ibid.*, p.244.

<sup>51</sup> Bigazzi, 1994, pp.182-210.

**Table 10** : Production at ALFA ROMEO Plants

	1938	1939	1940	1941	1942	1943	1944	1945
Workers*	6,038	6,026	6,419	7,355	7,500	7,988	7,867	6,968
Aircraft engines	1,415	1,244	2,119	1,808	2,124	1,871	1,231	–
Cars	542	373	103	63	154	70	17	3
Trucks	729	562	502	848	575	322	168	482
Production index	100	108,6	118,6	148,2	168,6	126,0	97,9	50,2

Source : Bigazzi, 1994, *op.cit.*, pp.182-210, especially pages 184-185. \* in Milan factory alone.

**Table 11** : Production at ANSALDO Plants

	1938	1939	1940	1941	1942	1943	1944	1945
Workers	16,613	19,239	21,433	24,926	27,147	27,492	23,717	–
Artillery Guns	–	–	390*	2,243	2,133	1,521**	601***	2****
Tanks & Armoured Vehicles	–	–	235	943	667	439**	542***	114****

Source: Bigazzi, 1994, *op.cit.*, pp.182-210, especially pp.184-185. \* : July-December 1940 ; \*\* : January-July 1943 ; \*\*\* : September 1943- September 1944 ; \*\*\*\* : October 1944-March 1945.

Bigazzi (1994) highlights an important paradox. In 1939, 22.4% of machine tools in the mechanical industry were modern (manufactured after 1934). Another 25.9% were rather modern (manufactured during the 1925-1934 period). Thus 51.7% of machine tools were outdated (manufactured before 1925). The modernization process continued during the war years. Whereas in 1939 36,809 tons of German machine tools were imported, in 1940 the same figure rose to 43,891 tons before declining in 1941 to 31,097 tons. These quantities were double or even triple the amount that the Italian industry could provide (15,000 tons). The importance of these imported machine tools comes to light when compared to the 1954-1958 period, when only 14,000 machine tools, representing 25,000-30,000 tons, were replaced annually; in other words, the machine tools imported from Germany during the 1939-1941 period replaced fixed-capital goods at a pace that was distinctly higher than 10-15 years down the road!<sup>52</sup> However, in spite of this modernization process, Italy's industrial production was shrinking. Whereas, based on 1929=100, the machine tool index rose from 145 in 1939 to 167 in 1940, 186 in 1941 and 190 in 1942,<sup>53</sup> the overall industrial index went down from 113 in 1939 and 111 in 1940 to 96 in 1941 and 84 in 1942. In the aircraft industry, the number of factories increased from 17 in 1934 to 27 in 1939 and 35 in 1943. However, in April 1943, a German report warned that the Italian aeronautical industry's monthly production had dwindled to a mere 870 airplane engines, manufactured in 6 different factories. The attempts to rationalize production by concentrating it in the Lancia, Alfa Romeo and FIAT production lines had no positive outcome.<sup>54</sup>

<sup>52</sup> Bigazzi, 1994, *op.cit.*, pp.182-210, especially pp.185-186.

<sup>53</sup> *Ibid.*, especially p.182.

<sup>54</sup> *Ibid.*, especially pp.190-191.

The Ellis (1995) study provides concrete data on defence production.<sup>55</sup> The author mentions that Italy produced 2,473 medium tanks and self-propelled guns (40 in 1939, 250 in 1940, 595 in 1941, 1,252 in 1942 and 336 in 1943), excluding light tanks and armoured vehicles. The total number of artillery guns is estimated at 7,200 (including anti-tank and anti-aircraft guns). The same figure is 83,000 for military lorries and 11,122 for aircraft (4,510 fighters, 2,063 bombers, 1,080 reconnaissance planes, 468 transports, 1,769 trainers). Ship construction went up from six ships in 1940 (2 battleships, 2 cruisers, 2 submarines), to 11 in 1941 (1 battleship, 3 cruisers, 7 submarines), to 17 in 1942 (1 cruiser, 6 destroyers, 10 submarines), before it abruptly decreased to only 9 submarines in 1943. Turning to commercial ships, a total of 469,606 tons were constructed (119,757 in 1939, 35,299 in 1940, 96,999 in 1941, 153,656 in 1942 and 63,895 in 1943).<sup>56</sup>

According to a study by Harrison (1998), Italy produced 1,700 airplanes and 40 warships in 1939. From June 1940 (when the country entered the war) until September 1943 (a total of 38 months), the country produced 125,000 machine guns, 10,000 guns, 17,000 mortars, 3,000 tanks and self-propelled guns, 327 major warships and 13,300 aeroplanes (3,300 in 1940, 3,500 in 1941, 2,800 in 1942 and only 2,000 in 1943). Interestingly, the construction of ships went up over the same time bracket from 12 in 1940, to 41 in 1941, 86 in 1942 to 148 in 1943. The data supplied by Harrison (1998) thus differ from those of Ranki (1993) and Ellis (1995).<sup>57</sup>

Two studies published by Vera Zamagni (1997, 1998) are even more detailed.<sup>58</sup> According to her (1998), the Italian economy had a sufficient energy supply and did not suffer from a labour shortage in spite of continued worker immigration to Germany. The low level of defence production is to be associated with inadequate managerial and entrepreneurial goals, opportunistic strategies on the part of managers, workers and shareholders, as well as with errors made by the Defence Ministry, and the chaotic situation of the defence industries. According to this source, between June 1940 and June 1943, the production of armaments for the Army amounted to 83,000-120,000 vehicles, 33,000-35,000 motorcycles, 9,800 artillery pieces of all types, 125,000 machine guns, 1,862-3,000 tanks, and 532 armoured vehicles. According to different data, the artillery production was 7,780 to 12,500. The production of mortars was at 16,800 pieces and the production of self-propelled guns was 645 pieces. There are no data about small arms production.<sup>59</sup> However, precise data on aircraft and ship construction are available.

The detailed data in Table 12 (next page) demonstrate the immense difference between planned and actual airplane production during the 1933-1943 decade, especially for the period 1941-1943 when those differences appear most pronounced. The inability to meet the targets is associated with internal rigidities (lack of investment, technological inferiority, limited planning, bureaucracy, low-skilled labour, absence of economies of

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<sup>55</sup> Ellis, 1995, *op.cit.*

<sup>56</sup> *Ibid.*, pp.278-280.

<sup>57</sup> Harrison, 1998, pp.1-42, especially p.16.

<sup>58</sup> (1) Zamagni, 1997 ; (2) Zamagni, 1998, *op.cit.*, pp.177-223.

<sup>59</sup> Zamagni, 1998, *op.cit.*, pp.177-223, especially p.196.

scale and scope). The problem was both quantitative and qualitative. Italian aircraft could not compete with the designs of their German or Allied counterparts. The marked weakness of the Italian Air Force was an essential factor in the defeat of Italian forces in Africa and in the Mediterranean.

**Table 12 : Military Airplane Production (1933-1943)**

<b>Year</b>	<b>Planned Production</b>	<b>Actual Production</b>
1933	424	386
1934	455	328
1935	1,236	895
1936	2,031	1,768
1937	1,900	1,749
1938	1,700	1,610
1939	1,930	1,750
1940	3,785	3,257
1941	4,200	3,503
1942	4,800	2,821
1943	3,822	2,024

Source: Zamagni, 1998, *op.cit.*, pp.177-223, especially p.196.

For the Navy, the data are as follows :

**Table 13 : Ship Construction (1935-1943)**

	<b>Battleships</b>	<b>Cruisers</b>	<b>Destroyers</b>	<b>Destroyer escorts</b>	<b>Torpedo boats</b>	<b>Corvettes</b>
1935	–	2	–	–	2	–
1936	–	2	–	–	10	–
1937	2	2	4	–	4	–
1938	–	–	5	–	20	–
1939	–	–	7	–	–	–
1940	4	–	–	–	–	–
1941	-	–	–	–	–	–
1942	1	1	5	10	–	5
1943	–	2	–	5	1	23

Source : Zamagni, 1998, *op.cit.*, pp.177-223, especially page 194.

**Table 14 : Ship construction (1935-1943), continued**

<b>Year</b>	<b>Submarines</b>	<b>Pocket Submarines</b>	<b>Other Fast Ships</b>	<b>Anti-Submarine Warships</b>	<b>Small Anti-Submarine Warships</b>	<b>Minesweepers</b>
1935	4	–	–	–	–	–
1936	14	–	–	–	–	–
1937	10	–	–	–	26	1
1938	21	2	–	–	–	–
1939	7	–	–	–	25	1
1940	8	–	–	–	–	–
1941	8	6	–	–	26	1
1942	11	–	18	35	–	–
1943	8	8	17	16	1	67

Source : Zamagni, 1998, *op.cit.*, pp.177-223, especially p.195.



These naval construction data show that the majority of new vessels were made before Italy's entry into the war. In addition, the level of training was lower compared to the British Navy, and the supply of fuel was very limited, thus forcing the Navy to almost permanent immobility and inaction.

Zamagni also provides detailed data on defence spending:

**Table 15** : Total Defence Spending (1940-1943)

Figures	Year	1940	1941	1942	1943
Total Defence Spending (million lire)		29,801	65,224	74,833	94,338
of which % Armaments & Military Operations		72%	85%	89%	89%
% of GNP		9%	20%	20%	20%

Source : Zamagni, 1998, *op.cit.*, pp.177-223, especially p.206.

Though the sums involved may seem high, the percentages (shown in the above table's last line) of spending on armaments and military operations as a function of GNP were actually the lowest among belligerent nations.

The next study is that of Ceva and Rochat (2001).<sup>60</sup> Its authors submit that in 1929 the Italian Army had endorsed a modernization programme which aimed to procure 15,371 modern artillery guns with 58 million shells, but that the global economic crisis of 1929 had stifled the funding and the programme. The plans for the modernization of the artillery were postponed to the years 1942-1943. As regards tanks, most of them were light (a joint production of FIAT and Ansaldo); the CV3 (3-ton) type was without any radio equipment and armed with only two machine-guns. There were medium (M-type) tanks of 11, 13, 14 and 15 tons, but all had technical problems. Although Germany provided an export license to procure its Panzer III and Panzer IV models, the plan never materialized. Another plan to procure new tanks from Skoda was not implemented either. When the country entered the war, the Army's strength was 1.6 million (of whom 600,000 were in the colonies). In the summer of 1940, another 100,000 were mobilized. The Navy had 6 battleships, 19 cruisers, 113 submarines, and the Air Force boasted 1,753 airplanes (but only 900 were modern). Before the war, the aircraft industry's philosophy was to build 40-50 different prototypes and follow a policy of many orders of small numbers in order to increase competition and quality. This policy continued in the war years. Monthly aircraft production was 271 planes in 1940, 292 in 1941, 235 in 1942 and 241 in 1943. Between June 1940 and June 1943, the defence industry produced 7,000 guns, 16,800 mortars, 125,000 machine-guns, 60,000-65,000 vehicles, 10,545 aircraft (4,510 fighters, 2,063 bombers, 1,080 reconnaissance, 468 transports, 1,769 trainers and 655 of other types). In 1940-1943, 1 battleship, 3 light cruisers, 5 destroyers, 16 torpedo boats and 39 submarines were constructed. The country suffered heavy Merchant Marine losses: 597 ships (above

<sup>60</sup> Ceva & Rochat, 2001, pp.456-475.

500 tons each) representing a total weight of 2,190,857 tons, and another 1,278 ships (below 500 tons each, a total weight of 81,850 tons) were either sunk or disabled. According to the authors, Italy did not have the equivalent of the Ruhr Valley, and the shortage of raw materials was the most important reason for its defeat.<sup>61</sup>

The official German *History of World War II* is the next important source.<sup>62</sup> The study points out that the Italian armed forces had a severe oil problem. To illustrate, during June-December 1940, the Navy consumed 676,560 tons of oil and at the beginning of 1941 the oil reserves were 1,123,148 tons, an amount adequate for one year. The oil reserves of the Air Force were just 130,000-142,000 tons, again enough for only one year of operations. Finally, the Army's oil reserves were 404,000 tons with an additional general reserve of 354,000-366,000 tons, an amount that was barely sufficient for eight months. However, during the June 1940-September 1943 period, the Italian armed forces consumed a total of 5,312,000 tons, of which Germany provided 3,572,000. Regarding other raw materials, the Official German History mentions that Italian domestic production covered 15% of the country's needs in coal, copper and tin, 50% of its needs in manganese. In addition, the economy was totally dependent on imported quantities of wolfram, nickel, and molybdenum.<sup>63</sup> On February 13<sup>th</sup>, 1939, an Italian-German Trade agreement was signed and Germany provided Italy with more than 6.8 million tons of coal and more than 1.9 million tons of other materials and goods. One year later (February 24<sup>th</sup>, 1940), the Trade Agreement was modified to the effect that greater amounts of coal and goods were to be shipped from Germany to Italy. However, the actual deliveries were low because of weather conditions in spite of the use of the German-Swiss-Italian rail network.<sup>64</sup> According to this source, between January 1939 and September 1943, the Italian defence industry produced 13,523 airplanes (8,246 during 1941-1943 alone). According to these German data, during the 1914-1918 war Italy had produced 19,000 artillery guns whereas the figure for 1939-1943 was 12,500 guns. Moreover, while in 1914-1918 a total of 1,286 man-hours were needed for the production of one 149-mm artillery gun, during 1939-1943 an astonishing 12,475 man-hours were needed to produce the same gun! In general, the Italian defence industry during the war was only able to cover 10% of its needs in light machine-guns, 25% in 20-mm machine guns, 40% in 45-mm mortars, and 70% in 81-mm mortars. The industry covered the 23% of requirements for high explosives, 42% for aircraft and 10% for ammunition (shells). Only 40% of needs in air-delivered bombs (of more than 1,000 kg) were covered.<sup>65</sup> Thus the official German World War II History is critical of Italy and of its defence production. However, when the Germans seized the Italian Armed Forces in September 1943, the captured materiel was as follows :

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<sup>61</sup> Ceva & Rochat, 2001, *op.cit.*, especially pp.461-462.

<sup>62</sup> This refers to the 13-volume *Das Deutsche Reich und der Zweite Weltkrieg* series authored by German historians over 30 years and published in translation by Oxford University Press under the general title *Germany and the Second World War*. Of notable use for the present article were: vol. III (Schreiber, Stegemann & Vogel, 1995) and vol. V/ II (Kroener, Müller & Umbreit, 2003).

<sup>63</sup> Schreiber, Stegemann & Vogel, 1995, p.35.

<sup>64</sup> For details : *ibid.*, pp.31-33 and 39.

<sup>65</sup> *Ibid.*, pp.73 and 76.

**Table 15** : Italian War Materiel Captured by the Germans (September 1943)

Authors	Cartier (1995)	Official German History of WWII (2000)	Garibaldi (2002) (*)	Oikonomakos (2002)	Guglielmi (2005)	Pinkus (2005)
Equipment						
<b>Rifles</b>	1,250,000	1,285,871		1,250,000		1,250,000
<b>Pistols</b>		16,236				
<b>Sub-machine guns</b>		13,906				
<b>Machine guns</b>	38,383	39,007		38,383		33,000
<b>Mortars</b>		8,736				
<b>Artillery guns</b>	9,988	5,568		9,988		10,000
<b>Anti-tank guns</b>		1,173				
<b>Anti-aircraft guns</b>		1,581				
<b>Vehicles</b>		19,519		15,500		15,500
<b>Horses &amp; Mules</b>				67,600		
<b>Tanks &amp; Armoured vehicles</b>	970	977		970	910	920
<b>Uniforms</b>						1,500,000
<b>Shirts</b>	1,139,000			1,139,000		
<b>Helmets</b>		1,300,000				
<b>Ammunition (in tons)</b>	287,502			287,502		
<b>Airplanes</b>	4,553			4,553		4,000
<b>Battleships</b>						2
<b>Cruisers</b>						6
<b>Destroyers</b>						11
<b>Submarines</b>						11
<b>Torpedo boats</b>						60
<b>Commercial ships</b>						61
<b>Oil (million gallons)</b>						32
<b>Iron (in tons)</b>	15,500			196,000		
<b>Mercury (in tons)</b>	3,400			3,400		
<b>Textiles (in metres)</b>	352,000			352,000		

**Sources** : (1) Cartier, 1995, pp.170-171 ; (2) Kroener, Müller & Umbreit, 2000, p.704; (3) Oikonomakos, 2002, pp.52-59 ; (4) Pinkus, 2005, p.381. (\*) According to this source, 5 battleships, 8 cruisers, 38 submarines, 250 planes and many small ships were surrendered to the Allies. See: Garibaldi, 2002, p.181.

The only case across Europe where the Germans failed to capture Italian armaments occurred in Thessaly, Greece, where the Italian “Pinerollo” Division surrendered to the Greek resistance movement ELAS. The Greek guerrilla fighters took 10,000 rifles, 20 artillery guns, 2 armour vehicles, 100 trucks and more than 50 smaller vehicles.<sup>66</sup>

Among the data presented in Table 15, the most controversial concerns aircraft. According to another source, Italy had produced and deployed 14,562 airplanes during the war.<sup>67</sup> Of those, between June 1940 and September 1943, 6,483 were lost, leaving a total of 8,079. Thus, if the Germans captured 4,533 planes (of which 2,867 were first-line aircraft),

<sup>66</sup> See : Salavrakos, 2009, p.131.

<sup>67</sup> Neulen, 2000, p.329.

the question is what happened to the remaining 3,526. Some sources contend that the Germans only captured 1,031 aircraft, and others that the total was 1,300, which eventually the Germans gave back to the new Fascist Italian Air Force (ANR: Aeronautica Nazionale Repubblicana) in September 1944.<sup>68</sup>

Italian forces experienced defeats throughout the war. Thus, they were defeated in Africa during the June-December 1940 period, with losses of 78,000 men captured by the British along with 201 tanks, 437 guns, and 706 lorries.<sup>69</sup> When Italy attacked Greece (on October 28<sup>th</sup>, 1940), it also suffered a humiliating defeat. During the October 1940-April 1941 period, the Italian forces suffered immense losses: 14,000 dead, 50,000 wounded, 25,000 missing, 12,000 crippled by frost.<sup>70</sup> In the face of such huge Italian losses at the hands of the Greek resistance, Hitler was forced to intervene in order to save the morale of the Italian Army and the prestige of Mussolini. In February-December 1941, Germany again intervened on the African front in order to save its Italian ally. In November 1941 Italian losses were 21,908 men and 120 tanks.<sup>71</sup> In 1942, in the battle of El Alamein the Italian forces suffered more than 20,000 casualties. On the naval front in the Mediterranean in 1941, the Italian Navy lost the battle of Matapa (March 28<sup>th</sup>) and other naval battles south of Crete. The Italian Air Force lost 100 airplanes over Malta.<sup>72</sup> In that same year, the Italian forces on the Eastern Front collapsed when (November 1942) the Soviets counter-attacked at Stalingrad, where between December 8<sup>th</sup> 1942 and January 30<sup>th</sup> 1943 the 8<sup>th</sup> Italian Army suffered 84,830 dead.<sup>73</sup> When the Axis powers in Africa surrendered in May 1943, another 165,000 Italians were made prisoners.<sup>74</sup> The allied invasion of Sicily cost the Italian Army another 135,000 men, and by September 3<sup>rd</sup> 1943 Mussolini was out of power and an armistice was signed between Italy and the Allies. On September 9<sup>th</sup>, the German Army launched a devastating attack across Italy (and occupied Europe) and captured more than 600,000 Italian soldiers in their barracks<sup>75</sup> along with all their war materiel. It was the end of an army which had not even scored one crucial victory in the war.

## **The Ideological Rationale for Mobilization in the Two World Wars**

The limited evidence available suggests that, compared to the Second World War, the mobilization for the First World War was much better organized and also enjoyed higher labour productivity. Thus the supposedly inherent efficiency of the fascist corporative economy model proved a huge myth.

The “successful case” of the 1915-1918 mobilization owed less to “free capitalism” than to “national and multinational capitalism”. The spirit behind it can be found in the

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<sup>68</sup> *Ibid.*, pp.74-78.

<sup>69</sup> Salavrakos, 2012, pp.396-397.

<sup>70</sup> Fischer, 1999, p.78.

<sup>71</sup> Weinberg (ed.), 2004, p.862, footnote 518.

<sup>72</sup> Neulen, 2000, *op.cit.*, p.53-55.

<sup>73</sup> Walsh, 2000, pp.165-166 and 170.

<sup>74</sup> Cartier, 1995, *op.cit.*, p.117.

<sup>75</sup> When this took place, 42,000 Italian soldiers joined the Germans, while 260,000 rallied to the Allies.

ideas of Giuseppe Mazzini (1805-1872). That classical author was simultaneously a nationalistic thinker who endorsed the ideals of Ancient Imperial Rome and a globalization thinker committed to “*a world of peaceful cooperating peoples organized on the basis of free self-determination*”. He pointed out that “*the Rome of the Caesars imposed the unity of civilization (...) upon Europe. The Rome of the Popes imposed the unity of civilization (...) on a great part of the human race. The Rome of the People will give rise to (...) a Unity (...) accepted by the (...) nations of humanity*”.<sup>76</sup> Thus the Italian World War I mobilization was based on the idea that, after its unification, Italy had a new destiny that was to establish a new Europe of the Peoples as opposed to the more or less authoritarian regimes of the period.

In contrast, mobilization for World War II was based on the economic ideas of Fascism. As Mussolini himself asserted :

If the bourgeoisie (...) believe that they have found in us their lightning conductors, they are mistaken. We must go towards the people (...), we wish the working classes to accustom themselves to the responsibilities of management, so that they may realise that it is no easy matter to run a business. (...) Fascism is (...) absolutely opposed to the doctrines of Liberalism both in the political and in the economic sphere. (...) Liberalism played a very minor part in building up Italian unity. (...) If Liberalism spells individualism, Fascism means collectivism. (...) Fascism desires the State to be strong and organically based on solid conditions of popular support (...).<sup>77</sup>

However, the vision of a strong State based on the nexus of popular support and efficient institutions was a myth. According, to another source:

Furthermore, the corporative system in action proved to be primarily bureaucratic in nature and effect. The actions carried out by fascist corporations (drainage in certain parts of Italy, solutions to disputes between producers, rationing controls and retail prices, bank control, mandatory unions) were not particularly original or effective. Fascist corporations never became strategic powerhouses of the national economy and the discussions they undertook rarely had any relevance in practice. Their activity was for the most part consultative, while the issuing of rules regulating economic activities in different sectors, the real ‘revolutionary’ issue, was very limited...Fascist corporations allowed social conflict to be appeased in a context of internal and international economic difficulties, while the real centres of power in banking and industry were elsewhere, especially in State institutes that were developing (after 1933) around IRI and that were directly dependent on the government.<sup>78</sup>

The fascist institutional failure is a typical counter-example of New Institutional Economics (NIE) theory which has it that economic development is associated with four ingredients : (1) efficient public sector ; (2) low debt level in the economy ; (3) efficient central banking and monetary policy resulting in monetary stability; (4) absence of

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<sup>76</sup> Kohn (ed.), 1964, pp.15-22, especially pp.15-16.

<sup>77</sup> *Ibid.*, pp.199-203.

<sup>78</sup> Cinquini, 2007, pp.209-240, especially p.214.

institutional failure.<sup>79</sup> Quite obviously, the Italian economy in 1940 presented none of these traits: the public sector and the institutions were inefficient, the debt was high, and monetary stability had been jeopardized in the wake of the 1929 economic crisis. Thus economic failure of the mobilization during the years 1940-1943 can be attributed not only to a shortage of raw materials but to the country's inefficient institutions.

### **Concluding Remarks: *vanitas vanitatum et omnia vanitas***

Italy's economic/ industrial mobilization during the two world wars was the least efficient among belligerent States. And, in spite of different ideological motives, the recipient of the defence mobilization, i.e. the Italian armed forces, failed immensely during both wars. In the First World War, the Italian high command's eye was fixed on the Austro-Hungarian province of Trieste and this obsession made the Italians attack eleven times in a valley against an enemy who was better supplied for most of the period and enjoyed perfect cover and visual control of the battlefield from high hills and mountains. The outcome was disastrous.

In the Second World War, the Italian forces fought as part of the '*Mare Nostrum* strategy' – the obsession that Italy could dominate the Mediterranean by sea and by land (via dominant positions in North Africa and Greece). Another fixation was the Eastern Front against the Bolsheviks. The armed forces did not have the strength, the training, the supply assets, and even the morale to achieve such a grand strategic design. Italian strategic planning was *vain* – in both senses of the word.

The Italian soldier was brave and many times had to endure the hardships of climate and bombardment by an enemy that was better led, equipped, supplied and trained. This occurred in both conflicts. It was hard to fight in the winters of 1915-1918 and fighting in the winter cold of 1940-1941 in Albania, in the heat of the desert during 1940-1943, and the Russian winter of 1941-1942 was even harder. In World War I, the Austro-Hungarian Army was well supplied and enjoyed complete tactical superiority. The same applied in World War II to the British Army in North Africa, the Greek Army in Albania and the Red Army on the Eastern Front. The Italian Navy in the Mediterranean had to face the British Royal Navy – a much superior force in terms of firepower, air support, and training. Finally; the RAF in Malta and North Africa was far superior to the Italian Regia Aeronautica.

The blame has to be placed on the Italian military and political leadership, who in both wars demonstrated an immensely narrow-minded vision in organizational, strategic and tactical affairs.

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<sup>79</sup> On applying the NIE theory, cf. Ferguson, 2002, p.16.



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### **Dedication**

This article is dedicated to the memory of my beloved grandmother Stavroula Poulea-Koutsikou (1921-2019). She had lived the horrors of the Second World War and of the Italian and German occupation of Greece and told me many stories from that era, which triggered my interest in the subject. In spite of her difficult life experiences, she pointed out before departing that she "had complaints neither with God nor with humans".