

Italy at War, 1915-1918*

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1. Introduction

Italy had long nursed the ambition to complete its national unification by annexing the territories held by Austria around Trento and Trieste before the Great War. Yet Italy's diplomacy and armed forces reached war unprepared. It will be argued in this chapter that this reflected international constraints as well as domestic political and social forces before 1914, and it will be shown how these influenced the Italian war effort.

As an economic power Italy is most easily compared with the Habsburg Empire, her chief adversary in World War I. These two powers were both economically of middle size and development level, but the Italian economy was a little smaller and also somewhat more developed than the Austro-Hungarian. Thus Italy's prewar population numbered 36 millions compared with Austria-Hungary's 51 millions while Italy's real GDP was roughly 90 per cent of Austria-Hungary's. Thus the average citizen of the Austro-Hungarian empire was roughly 25 per cent poorer than the average Italian (see chapter 1, tables 1 and 2). In turn, Italians were substantially poorer than the Germans, French, or British. In a war fought only between Italy and Austria-Hungary it is not clear which would have had the greater military potential, since Italy's demographic disadvantage was offset by a higher development level. But in World War I Italy held a clear strategic advantage since Austria-Hungary fought on several fronts and Italy only on one.

Italy, we are frequently told, was a divided country. More accurately, it had never been united. By the war's outbreak the Kingdom of Italy was only just over 50 years old, and the loyalties to the old ruling families were far from forgotten. The constitutional monarchy enjoyed the support of a minority, mostly the professional classes, the military, and part of the aristocracy. The powerful Catholic Church remained in open opposition to a liberal, secular state; as late as 1910 Catholics were still under an interdict if they voted and this caused many from the lower middle classes to remain outside the political arena. On the Left, a growing Socialist movement denounced King, Country, Church, and Private Property, while struggling within itself between reformist and revolutionary tendencies. Socialists gained support among the better off peasants of the centre-north, hard-hit by the low farm prices of the late nineteenth century, and the urban workers of the "industrial triangle," the area of north-western Italy between the cities of Turin, Milan, and Genoa. Rapid manufacturing growth from the mid-1890s had swollen the workers' ranks, and periods of high urban food prices led to strikes, riots and bloody confrontations with the army. In July 1900 the king was assassinated by an anarchist.

War objectives evoked no wide popular support in Italy, unlike a number of other countries that joined the war with enthusiasm. Thus Italian domestic differences were not papered over at the outbreak of hostilities. On the Right, the Church was firmly against war, especially against another Catholic power, Austria. On the Left, the nationalist aims of the war were derided as hollow, or as a prize to be paid for by the proletariat. Though some Socialists saw the war as ushering in the long-awaited final crisis of capitalism, their opposition to the war effort was mostly uncompromising. One notable exception was the editor of the

Socialist daily who declared in favour and was promptly expelled from the party. Widespread, murderous street clashes between interventionists and neutralists preceded the decision to enter the fray.

Throughout the war political rifts divided the country ever more bitterly. In itself this was not unusual; the stresses of total war led eventually to increased social conflict in every European power that took part. What is unusual is that final victory was followed by revolution: within four years the equilibrium of Liberal Italy was finally swept aside by a *coûp d'état* led by that same erstwhile Socialist editor: Benito Mussolini.

The other great divide was the north-south gap: in 1911 in the south, value added per worker was barely two-thirds of the national average, and personal income only half (Toniolo, 1990: 122; Zamagni, 1993: 39; Cohen and Federico, 2001: 15). Literacy, infant mortality, life expectancy, or any other index told the same story of divergence. The rapid growth of GDP per head from the mid-1890s to the 1907 crisis, between 3 and 4 per cent per year, was almost exclusively a northern phenomenon, except for small concentrations of industry attracted by the political and administrative centres that recycled rents and taxes in the south (Fenoaltea, 2001). The growth was fuelled by an investment boom: gross fixed capital formation ran at almost 14 per cent of GDP per year (Toniolo, 1990: 101; Rossi *et al.*, 1993: Table 2B). Virtually all this investment took place in the north-west, however, in the area between Milan, Turin, and Genoa (Fenoaltea, 2001).

Italy's industrial concentration had important implications for the war. The machinery, equipment, and skill pool necessary for mass production of modern war materiel was found almost exclusively in a few hundred square kilometres in the north-west: 72 per cent of plants working for the war effort in 1916 were in Milan, Turin or Genoa, and only 8 per cent in the south (Caracciolo, 1969: 201). Thus the war reinforced the north-south gap, giving it a particularly bitter twist: many northern men of military age were assigned to the more technical and "safer" corps of artillery and engineers, or exempted from service altogether to engage in essential production. On the other hand, southern peasants were assigned to infantry regiments and went to fight over foreign territory for incomprehensible reasons (Clark, 1984: 186-7).

Internationally, Italy's prewar alliance with Austria-Hungary and Germany was motivated mostly by long running commercial and colonial disputes with France and by the desire to limit Russia's influence in the Balkans and the Mediterranean. The alliance was weakened, however, by Italy's claim to substantial territory held by one of its strategic allies. Mistrust between Italy and Austria ran deep after almost a century of nationalist unification wars against Habsburg opposition. At the same time Italy's relations with its strategic adversaries were far from unfriendly, although formal *rapprochement* to France was ruled out while Italy belonged to the Central Powers. Franco-Italian relations improved steadily in the early twentieth century. As for Britain, the one firm point in Italian diplomacy was the need to cosy up to a country that supplied 90 per cent of Italy's coal (Forsyth, 1993: 165) and whose navy could choke off access to the Mediterranean and threaten Italy's long, exposed coastline. Needless to say good Anglo-Italian relations were resented in Berlin and in Vienna. When Austria refused Serbia's reply to its ultimatum

and precipitated the war, Italy was not consulted, as required by the alliance treaty. This gave Prime Minister Salandra the chance to heave a sigh of relief, declare neutrality, and ponder which way to jump.

The Italian military reached the beginning of war in Europe while still engaged in mopping-up operations in Libya, seized from Turkey in the war of 1911/12. As the lights went out in the summer of 1914 and the government dithered over which side could offer the best guarantees of allowing Italy to annex the territories it sought, the General Staff were equally uncertain whom they would march against. Its ambiguous position with the Central Powers meant that Italy had no grand plan such as Joffre's or Schlieffen's. As the fronts settled into trench warfare after the battles of the Marne in the west and Tannenberg in the east, Italy's top brass began to think that the war might be a long one (Pantaleoni, 1917), but did not use the opportunity to study how problems of provisioning and supply were being solved by the belligerents.

Probably the Italian military did not watch military-industrial mobilisation in other countries in 1914 because they shared a common belief that there was nothing to watch. If they had been watching, that would have been surprising. In Britain it took months, and longer in Germany, to come to terms with the changed nature of war. Thus, a head-in-the-sand attitude was not peculiar to Italy's officer corps; it reflected a purely "military" conception of warfare that was widespread in Europe, supported by the belief that mass armies and industrial economies could not coexist for long. In Italy, therefore, there was no attempt to gear the armed forces up for modern warfare even when the economic dimension of the war, with its massive hunger for industrial goods, was becoming clear. As late as May 1915, when its neutrality ended, Italy's entire stock of machine guns was 618 (including those in use in Libya and not all in working order) compared with 1,500 for Austria Hungary, 2,000 for France, and 3,000 for Germany when these countries had started to fight some 10 months previously (Ministero, 1927: 193 ff.).

Not all Italian political actors were so blinkered, however. We will see below that in Italy the declaration of war was followed swiftly by the appointment of a munitions and supply *generalissimo*, indicating that at least someone in the government *was* thinking about the productive implications of conflict. In Italy as elsewhere, however, it was not easy to translate these auspicious beginnings into a coherent plan. Even after years of conflict, bureaucratic duplication and *ad hoc* solutions remained.

In the Treaty of London (26 April 1915) the *Entente* powers agreed to Italy's entire territorial claims against Austria in return for its entry into the war within a month. On 24 May Italy declared war on Austria-Hungary; war with Germany did not follow until 29 August 1916. Being a latecomer to the war should have given the government an advantage in preparing for an industrialised conflict. The secret negotiations that led to the end of Italian neutrality were conducted with only minimal involvement of the General Staff, and the army was barely ready to begin operations.

Within three weeks, however, on 9 June, an under-secretariat was created within the War Ministry to deal with "Arms and Munitions." Endowed with wide powers and headed by the energetic and authoritarian General Alfredo Dallolio, the under-secretariat became a ministry two

years later. It employed almost 6,000 people in May 1918 when Dallolio was forced out by a financial scandal. This massive apparatus was not responsible to Parliament, operated in arbitrary and mysterious ways and apparently kept few accounts. General Dallolio's approach to provisioning, supply, credit, and allocation, had a profound impact on the structure of Italian industry. Among its postwar consequences were vast industrial conglomerates that struggled to survive in the less forgiving post-war atmosphere (Minniti, 1984). Their weakness marked the entire interwar period, pushing the Fascist regime into rescues and nationalisations and creating a large Italian state sector much of which has survived to the twenty-first century.

As far as wartime is concerned, however, the difficulty of translating authority into a plan is shown by the fact that, General Dallolio never managed to bring the whole of Italy's industrial war effort under his control. A surprising number of under-secretariats, committees, working groups and task forces functioned separately, without co-ordination and often at cross purposes, during the whole of the war. An inquiry after the end of hostilities revealed that no fewer than 297 governmental bodies, staffed by different people and reporting to different under-secretaries in 6 different ministries, had enjoyed the power to allocate resources for the war effort (Caracciolo, 1969: 197).

The management of Italy's war effort had an important foreign dimension. As a middle-income country, richer than Austria but substantially poorer than Britain, Germany, or France, Italy imported capital and exported labour through the nineteenth century. Borrowing on the capital account, combined with emigrants' regular remittances and earnings from tourism on the current account, enabled Italy to run a substantial deficit in merchandise trade. In the five years preceding the war, Italian exports covered less than two thirds of imports (Forsyth, 1993: 321), most important among which were foodstuffs, fuels, and virtually every mineral used in industry other than mercury and sulphur. This was not a problem in peacetime but war created a substantial problem of economic adjustment because the inflows that covered this deficit dried up; remittances, which covered about 40 per cent of it, fell by three quarters in real terms from 1913 to 1918 (Jannacone, 1951: 319).

A parallel with other powers brings out the point. Britain was also unable to feed itself and had to import essential industrial raw materials. However, the British balance of payments included important inflows from large foreign assets accumulated over the previous century. The war made a big dent into these assets, but the point is that at the war's outbreak Britain was the world's largest capital exporter precisely because its trade deficit was more than covered by invisibles and investment income. In contrast, Italy was a net capital importer before a single shot was fired, and the problem of financing Italy's wartime imports eventually tied the Italian government's hands. But it was in Italy's favour to have chosen her Allies from among the richer powers that could help her most easily.

Because Italy had been a net borrower for years, part of the Treaty of London involved opening a line of credit with the Bank of England in Italy's favour for £60,000,000 (Toniolo, 1989: 221-4). The demands of the war meant that the original credit had to be extended over and over,

and eventually Italy, like other Allied powers, entered the US market. The use of external finance was dictated in part by the Italian dependence on imported raw materials, but it also reflected a political awareness that standards of living could not be compressed without breaking the fragile political equilibrium that allowed the war to go on at all (Stringher, 1920: 92). The war was thus financed only in small proportion (16 per cent) by increased taxation; this proportion is comparable with France's 14 per cent and Germany's 13 per cent, though far below Britain's 50 per cent (Kindleberger, 1984: 292). As a result, at the Treaty of Versailles Italy had a public debt equal to 119 per cent of its GDP, of which almost three quarters were domestically held. This may seem to put Italy in a better position than Britain with 140 per cent, but the real problem was the debt held abroad, which at the average exchange rates prevailing in May 1919 was equal to five times the value of Italy's annual export trade (Toniolo, 1989: 14). Not surprisingly, the *lira* weakened steadily throughout the war, losing over 40 per cent of its value relative to the pound until it was rescued by joint intervention of Allied central banks in early 1918.

External weakness and political constraints on taxation meant that war finance was also found in monetary expansion. Of the same importance as increased taxation (16 per cent) in paying for the war, most of the monetary expansion took place in two episodes: the early months of the war, when opposition had not yet been silenced by censorship, and after the dramatic collapse in morale following military defeat at Caporetto in October 1917. Together with strained distribution channels and spreading shortages of labour and goods, this contributed to sharp bouts of inflation at politically delicate moments. Coupled with the arbitrary management of procurement contracts under General Dallolio, inflation fed resentment against the government figures and army brass believed to be lining the pockets of a few industrialists. The results included mutinies, strikes, rioting and a political polarisation between those who praised the war and the war leaders, and those who accused them of using the workers as cannon fodder. Especially after November 1917, revolution lurked just around the corner.

Three main themes of the Italian war experience emerge from this overview. The first is the management of domestic supply, and the creation of industrial giants such as FIAT, ILVA, Ansaldo, Breda. The second is the problem of war finance, both public and private, the choice between monetisation, taxation and debt, and the role of the Bank of Italy in directing public policy. The third is the external balance, exchange, debt, and imports, again a set of issues where the Bank played a leading role. The approach to each of these shaped the possible solutions to the others, and the economic history of World War I for Italy is largely the story of how Dallolio's approach was mediated by the Treasury and the Bank. Improvisation is an overarching theme that unites the history of Italy's *impromptu* war effort with that of others. These themes will be pursued in the rest of the chapter, but first an outline of events on the Italian front may help those readers who are unfamiliar with this side of the Great War.

2. Italy's War

The Italian-Austrian war was fought on land, since the Italian Navy sealed the port of Trieste which provided Vienna with its only access to the sea. Naval battles took place towards the end of the war, when the Imperial Navy tried to break through the blockade but was easily pushed back into harbour by a vastly superior Italian force that lay in wait.

For most people the image of the Great War on land is the mud of Flanders, but on the Italian front nothing could be farther from reality. The territory over which Italy and Austria fought is a range of mountains, the eastern end of the Alps, where trenches had to be blasted in the rock with dynamite or cut into the side of glaciers tens of metres deep, and where avalanches, frost, and lack of oxygen were as deadly as enemy fire.

The border between Italy and Austria, from Switzerland to the Adriatic Sea, 600 kilometres long, was shaped like an S on its back. The mountains above the S were Austrian and the plain below the S was Italian. Thus if the Austrians could break through the Italian lines at their southernmost point, they could envelope the Italian army in the upward-pointing portion of the S. And since Italy's main industrial centre, Milan, was only just over 120 kilometres away from the front, the Austrian high command hoped quickly to knock Italy out of the war.

The war proceeded in two phases. In the first phase from the summer of 1915 to the summer of 1917, the two sides hammered away at each other for no substantial or lasting gain. The summer of 1915 was marked by initial Italian successes. Already stretched on the Russian front, the Austrians had trouble holding their defensive positions and the Italian army made some inroads, though without actually breaking through the front at any point, until winter stopped operations. In the spring of 1916 the Austrian General Staff, launched a massive offensive on the southernmost curve of the front trying to punch through the Italian lines and drive east to the sea, bottling up the Italian army against the Austrian-held mountains. In spite of the vast resources used, desperate Italian resistance stopped the offensive. By the end of 1916 the frontline remained what it had been in late summer. Military activity resumed in 1917 once mountain passes had opened up, and this time it was the Italians who launched two serious assaults in late spring. The gains were however minor, and a new offensive duly followed in August. Again the lines remained broadly unchanged until the autumn.

In the second phase, from the autumn of 1917 to the autumn of 1918, the front became more fluid. At the end of October 1917 the Austrians, with significant German reinforcements, managed to break through at Caporetto (now Kobarid in Slovenia). In a few days the Italian army was pushed back some 70 kilometres with the loss of 350,000 troops (killed, wounded and captured). While the blow was serious, the defeat brought compensations. First, once the Italians regrouped and stopped the Austrians on the river Piave, the fight was for the first time on level ground rather than uphill. Second, the Austrian envelopment had not worked, so that while casualties were serious the Italian army remained operational with a new Chief of Staff, General Armando Diaz. Third, Austrian supply lines had lengthened, and now had to cross difficult terrain with damaged transportation links. The Piave proved easy to

defend throughout the 1917/18 winter. When military operations resumed in the spring, neither side managed to cross the river. The summer passed in a series of costly but ineffective attacks and counter-attacks until, on the anniversary of Caporetto, General Diaz launched an offensive in which Italian forces simultaneously crossed on two points of the river and caught the Austrian troops, massing for an offensive of their own, in a pincer movement. The Austrian army collapsed and in less than a week, on 4 November, Vienna signed an armistice.

The final tally for the Italian front was: killed, 620,000 Italians and 410,000 Austrians; wounded, 947,000 Italians and 1,220,000 Austrians; captured and missing, 600,000 Italians and 700,000 Austrians. Among the more than one million dead, 120,000 froze to death or were buried alive by avalanches (von Lichem, 1925; Meregalli, 1928).

3. Supplying the Front

3.1. The General and the Industrialists

Italy's position as a latecomer to industrial development meant that the state always played a considerable role in the economy (Zamagni, 1993: 157-82): Europe's first railway nationalisation took place in Italy in 1905 (Maggi, 2001). Aside from agriculture, the most sheltered sectors were steel, cotton, and food processing. Thus, considerable administrative expertise existed within the government bureaucracy on the management and direction of complex industrial concerns. The political climate at the beginning of the war favoured the creation of some form of centralised governance structure that would manage war production, a "war dictator" as it was called at the time. Royal Decree 993 formed a Supreme Committee of Ministers to oversee war production, the daily decisions being made by the Under-secretariat for Arms and Munitions (AM). The decree gave the government, in effect the AM, ample powers: to force private firms to produce and supply materials and goods and invest in increased productive capacity, to take over private plant and equipment and manage it directly, and to requisition energy resources regardless of existing contractual agreements (De'Stefani, 1926: 416-7). In practice extreme measures were never taken because, as General Dallolio himself explained to the Parliamentary Inquiry Commission after the war, "the government is inevitably ... slower ... than private individuals, so that in its hands production would have declined ... [which was] exactly the opposite of the desired effect. For this reason, and also because I trusted the patriotism of industrialists and workers, I did not order requisitions or government take-overs" (Forsyth 1993, 81).

The AM was organised in separate branches for "general tasks," "industrial mobilisation," and "technical services." The General Tasks Bureau involved research and development, contact with foreign ordnance services, transport services, and a statistical office; what statistics this office collected, if any, and where they might now be is not known. The Bureau of Industrial Mobilisation, UMI (*Ufficio mobilitazione industriale*) ran the industrial side of the war effort. The Technical Services Bureau set technical standards and quality tests for all procurement contracts affecting raw materials and industrial goods.

Alongside these bureaux worked separate directorates for Artillery, the Engineering Corps, and the Air Force.

Two Royal Decrees (26 June and 22 August 1915) gave UMI vast powers in dealing with war production. Beside being in charge of all existing ordnance works in the country, UMI had the right to classify private establishments and even whole firms as “auxiliary” to the war effort, which meant that UMI thereby assumed significant aspects of the owners’ right to manage these establishments for an indefinite period. But firms often welcomed auxiliary status because it eased restrictions on their access to energy, labour, and raw materials.

Running the activities of UMI was the Central Mobilisation Committee, in charge of procurement contracts, the allocation of non-military personnel and exemption from military service, the coordination of transport and the allocation of fuel, the import and export of war materiel, and also, strangely, propaganda and “patriotic action.” The Central Mobilisation Committee comprised an inner *sanctum* of “technicians” appointed by General Dallolio alongside industrial managers’ and workers’ representatives. The latter do not appear to have been from trade unions, most of which were against the war, but were chosen by management on grounds of experience and technical competence.

This structure covered the country by dividing it into 7 (later 11) regions, each with a Regional Mobilisation Committee handpicked by General Dallolio. Each regional committee, chaired by a general or admiral, was made up by a few civilian “technicians,” industrialists, and workers, plus representatives of the Central Committee. Alongside each Regional Committee, often working at cross purposes with them, were other public bodies, some with provisioning functions such as the agricultural requisitioning consortia and the civil mobilisation committees (De’Stefani, 1926; Einaudi, 1933; Mascolini, 1980).

Alongside their other powers, the Regional Committees could compel the productive integration of smaller firms into nearby military ordnance plants or even into larger private firms, creating a form of compulsory outsourcing that involved dozens of small firms at times (Caracciolo, 1969: 200). This policy was fostered without cabinet approval, as the Royal Decrees permitted, by General Dallolio who, as Chief of Staff for the Engineering and Artillery Corps since 1911, had direct knowledge of the fragmented nature of Italy’s mechanical industry (Minniti, 1984).

As the war continued, UMI gave auxiliary status to growing numbers of firms: 1,976 by the end of the war, employing over 580,000 workers. Adding to this the 322,000 workers in the ordnance plants, virtually one industrial worker in three worked directly under UMI’s control in 1918 (Caracciolo, 1969: 202; Rossi *et al.*, 1993: Table 6).

The industrial capacity controlled in this way was highly concentrated: three quarters of workers in auxiliary firms were in northern Italy, with over 70 per cent in the Industrial Triangle alone: 32.2 per cent in Milan, 22.3 per cent in Turin, 16.2 per cent in Genoa (Caracciolo, 1969: 202). Even more indicative of the nature of the war effort is the sectoral distribution of auxiliary firms. Between 80 and 86 per cent of auxiliary smelting and metal working plants were in the Industrial Triangle, as were 80 to 82 per cent of mechanical plants. Even in sectors where productive

capacity was somewhat more dispersed across the country, the north-west still accounted for the lion's share: 51 per cent of auxiliary chemical plants and 62.7 of textile plants were located here (Caracciolo, 1969: 202; Ferrari, 1991).

One aspect of this concentration was that AM staffed the Central and the Regional Mobilisation Committees and their bureaucracies by recruiting mainly from the limited population of managers, engineers and industrialists of the Triangle. As a result Leopoldo Pirelli, of the tyre firm, took charge of the production of rubber goods for the Regional Committee of Milan which included firms that were Pirelli's own competitors as well as Pirelli SpA itself. Dante Ferraris, FIAT's General Manager, ran a group of 25 mechanical firms, some of which were FIAT's rivals. The same went for electrical goods, steel, hydro-electric energy, and several other sectors (Caracciolo, 1969: 207-12). However steely was their moral fibre (and for some it certainly was), these industrialists turned regulators could avoid favouritism, cronyism and corruption only with difficulty, and to avoid the impression of corruption in popular perception was impossible. The resulting resentment against war profiteers fed political radicalism on both the left and right. In the event, the evidence suggests that after the war the concentration indices of Italian industry had risen significantly (Cohen and Federico, 2001, 50).

This was reinforced by the administrative confusion of AM. The postwar inquest into war procurement discovered that the 2,865 contracts signed by the Central Mobilisation Committee and the additional 24,516 signed by the different regional committees were scattered in 10,500 files held in different parts of the country without a central index or cross referencing system. In several cases, multiple copies of the same contract existed with vastly differing prices (Inchiesta, 1923: 67-77). Several large contracts were awarded orally. In the end it proved impossible to audit the orders placed by AM because a Royal Decree of 4 August 1915 had suspended normal public accounting procedures and nothing had been put in their place.

In this financial chaos regional committees regularly authorised massive advances to industrial concerns, and the government approved equally enormous tax exemptions for auxiliary firms, including vastly accelerated depreciation allowances on new investments and complete tax exemption on all new machinery, plant and equipment. Higher corporate tax rates on wartime profits were not introduced until after the war, and the proportion of retained earnings exempt from tax was repeatedly raised. In this hothouse atmosphere, providing an "expert" to one of the regional committees (or even better to the Central Committee in Rome) was a sure-fire way of ensuring preferential treatment that ranged from permissive budget constraints to privileged access to rationed inputs and the ability to affect competitors' supplies. Over the whole edifice hung General Dallolio's injunction issued in a memo on 27 June 1915: "in the end," he had written, "the time element *must* come before any other consideration" (Caracciolo, 1969: 208). Unknowingly Dallolio echoed the German General Staff's motto in those years, "*Gelde spielt keine Rolle*" ("Money plays no role," or "Costs don't matter," cited by Kindleberger 1984: 291).

3.2. War Production

From the few hard figures that we have, the results of industrial mobilization were mixed; they were possibly better than the performance of Italian industry in 1940-1945 (Zamagni, 1998). Table 1 reports indices of the volume of industrial output for selected industries, while military supplies are reported in Table 2. Allowing for the very low starting points in some industries in May 1915, the greatest gains were made in the mechanical and engineering industries as well as in hydro-electricity. The automobile industry was particularly successful at increasing output; it is important to note that this success was largely the success of one firm, FIAT, which went from producing about one-half of all Italian vehicles in 1913/14 to 75 per cent in 1917. In fact, 90 per cent of the increase in automobile output from 1913/14 to 1917, when production peaked, was attributable exclusively to FIAT (Zamagni, 1993: 224).

Insert Table 1.

Insert Table 2.

Aside from electricity and aeroplanes, early 1917 appears to have marked the peak of Italian war production. Certainly the output of the secondary sector grew rapidly early in the war (between 25 and 30 per cent by 1916), then stagnated or fell later on. At the armistice, manufacturing output was 5 to 6 per cent above where it had been in 1914, and about 8 per cent higher than the mean for 1908/13 (Toniolo, 1989: 126; Caracciolo, 1969: 215; Rossi *et al.*, 1993: Tables 1A and 1B). In short, therefore, the output increases in war-related sectors were obtained largely at the cost of running down stock elsewhere.

If war production was relatively successful up to 1917, the fact that it peaked before the end of the war and began to decline while the intensity of fighting was still rising requires explanation. At this time the economy was fairly fully employed but we shall see that in principle there was room to put pressure on consumption and shift resources to the war effort. The military setback of Caporetto occurred at the end of October 1917, and in response to this crisis the Bank of Italy further eased its already liberal credit policies. Given these, 1918 should have marked the high point of economic mobilization with every available resources thrown into the fray. The fact that the war economy had already encountered its limits may be explained in terms of coordination problems that increasingly impeded Italy's economic mobilization at the end of the war.

3.3. Limits on Economic Mobilization

The ultimate limit on the resources available for wartime mobilization is fixed by a country's gross domestic product and the import surplus that it can extract from its trading partners and allies. In Italy's case the wartime trend in GDP is something of a puzzle that Stephen Broadberry has laid out in more detail in the Appendix to this chapter. In Italy as elsewhere, no one was counting at the time; the trend in Italian GDP during World War I has been painstakingly reconstructed by Italian economic historians

long after the event. The puzzle is that, according to the most authoritative estimates, Italy's wartime performance was so good. By the end of the war all other economies with similar levels of development and similar agrarian structures were collapsing. Just to keep the Italian economy intact would have been a notable achievement. On one hand the figures suggest that by 1918 Italy's real GDP was at least one third higher than in 1913; if so, this performance outshines that of every other country in World War I, and matches the astonishing achievement of the US economy in World War II. Yet on the other hand the general tone of historical commentary on the Italian war economy is unenthusiastic, even gloomy. The literature has clearly missed something. Either Italy's statisticians have overstated the Italian wartime performance by a considerable margin, or the historians of Italy's war have missed an economic miracle. On the whole the former seems more likely but there is no certainty either way. Since we cannot resolve the puzzle here our discussion from this point must be to some extent provisional.

It appears that, first, that average consumption levels were maintained through the war and per capita food consumption even improved somewhat (Table 3). Despite this, distribution difficulties led to localised shortages (Toniolo, 1989: 11); some were so severe that they led to riots like the ones in Milan and Turin in the spring and summer of 1917.

Insert Table 3.

Before the war, Italy imported a shade under 20 per cent of its wheat consumption, largely from Russia and the lands around the Black Sea. As Turkey joined the Central Powers this route was choked off. By the end of 1914, before Italy had declared war, shortages were looming and the Government set up an emergency office for the provision of grains and flour as a part of the Ministry of Agriculture. When the harvest of 1915 turned out badly the situation suddenly became critical. Private stocks were being run down and some municipal councils organised their own requisitioning and distribution networks, but nationally nothing much was done.

Another six months passed before the Government legislated in early 1916 to requisition grains and other foodstuffs at fixed prices. Had price fixing been effective it would have had predictably negative effects on domestic supply, though it is difficult to separate the disincentives thereby created from the consequences of the massive withdrawal of manpower from agriculture for the front. But there was no purchasing, collecting, shipping, and distribution system to give effect to requisitioning. In any event, the requisitioning of domestic supplies failed to address the problem of Italy's dependence on imported food.

Amidst a flourishing black market, official price lists for food were published in March 1916 and later for other items. These lists discouraged exchange while giving the impression that the situation was in hand, which was not the case. The Government had no policy of what to buy, where to buy it, or, in the case of foreign supplies, how to allocate shipping for transport back to Italy.

Falling exchange rates and foreign reserves meant seeking ever more credit from the Allies, which was given increasingly on condition that

Italian purchases went through a centralised Allied control system. Once the foodstuffs were brought home, disarray in the railway system, corruption, and bureaucratic inertia meant shortages, and popular resentment rose both among consumers who could not find food and among farmers who viewed the prices paid by requisitioning agencies as confiscatory.

Ration cards were introduced in September 1917, though only after more bloody confrontations over food between workers and police in several cities, especially Milan and Turin, had left scores killed and wounded. The murky workings of Italy's bureaucracy lent credence to rumours that food was being deliberately withheld from stores by "profiteers," and workers clashing with the police asked for free distribution of food to compensate "past injustices." The food distribution system was not sorted out until virtually the end of the war when the organisation of deliveries was separated from the Ministry of Agriculture (Dentoni, 1987). By then, the US Federal Reserve System had agreed to support the *lira* and guarantee Italian purchases in the American market (see section 5 below).

Despite the confused and haphazard provisioning and distribution of food, or perhaps *because* it was so poorly run that food leaked from all sides, food consumption remained at prewar levels on average, apart from localised shortages. On the reckoning of Table 3 average food consumption actually rose, though no one has attempted to separate consumption by the military from that of the civilian population. Possibly, southern peasants in uniform ate better than they did at home; what that meant for their families is not clear. In the absence of a modern study of the problem it seems likely that, where the public authorities foundered, a lively though largely illegal private sector picked up the slack and supplied Italian households with a steady diet.

Since the economy's consumption resources were resistant to mobilization, the main burden of the war fell on investment. According to recent estimates, gross fixed capital formation fell from one seventh of GDP in 1913 to one fifteenth by the end of the war. At the same time, inventories were being run down so that *total* investment became negative (Table 4).

Insert Table 4.

The reduction in inventories is not surprising in a raw-material poor economy like Italy's, given the difficulty in obtaining reliable supplies by sea as Germany increased its submarine warfare in the Atlantic. Italian supplies were constrained by the growing pressures on British shipping even before Germany's declaration of unrestricted submarine warfare (Forsyth, 1993: 165-9). Total imports declined between 1916 and 1917, when industrial production peaked, by 3 per cent at constant prices. A significant part of this decline was accounted for by a decline of 33.9 per cent in imports of fossil fuels at constant prices (Rossi *et al.*, 1993: Table 8). In May 1917, the Italian mission to Washington was arguing that without increases in coal deliveries from the Allies "Italy would soon be out of the war" (Monticone, 1961). Thus Italian industry was increasingly short of inputs, especially coal which was almost entirely imported. Lack

of coal led to several steel furnaces being shut down during the last 12 months of the war (Caracciolo, 1969: 203).

Moreover, before the war almost 30 per cent of Italian imports had come from Germany or Austria-Hungary (Forsyth, 1993: 321), with German chemical and engineering products providing essential supplies to the chemical and mechanical industries whose output was most needed in the war effort. Although the interruption in German supplies appears to have stimulated some import substitution (Zamagni, 1993: 227-9), the short-term difficulties were considerable.

The shortages of fuels and other inputs bore heavily on railway transport.

Table 1 shows that the supply of railway rolling stock fell markedly from its 1914 levels for the duration of the war. More generally, infrastructure investment declined by 56 per cent in real terms between 1914 and 1917 (Rossi *et al.*, 1993: Table 4). Coal shortages presumably also played a role. Congestion on the overstretched transportation system was a likely result, especially in northern Italy. There is an echo of this in the tons of freight carried that Italian railways carried per kilometre of track: from an average of about 7 billion tons/km in 1910/14, the ratio rose to 8.9 in 1915 and over 11 billion in 1916, only to fall back to 10.6 in 1917 and 10.3 in 1918 (Mitchell, 1975: 593).

3.4. Postwar Consequences

In the course of industrial mobilization the structure of Italy's manufacturing sector was transformed. The contracts awarded by AM through UMI lacked audit or budgetary control, were not open to tender, and were more often than not awarded by a closed circle of people whose financial interests were closely aligned with the contractors'. To be elevated to one of the committees that made these crucial decisions one had to be known, or be introduced, to one man only: General Dallolio. The rewards of such a contact were significant, and it does not take advanced training in economics to realise that only large and well connected firms could hope to place their experts on the several committees that comprised AM. The unpreparedness of the public sector for a war that had been going on for ten months by the time Italy entered it, meant that massive rent seeking opportunities were created in the rush to put "the time element" above "any other consideration."

Under the circumstances it would have been surprising if these rents had not been seized, and rising net corporate profit rates bear witness to this capture. In steel, declared profits after tax went from 6.3 per cent of invested capital in 1910/14 to over 16.5 per cent during the war; in chemicals and rubber, from 8 per cent to 15 per cent, in woollens from 5 per cent to 18 per cent; in automobiles (as we saw, this meant in effect FIAT), from 8 per cent to 30 per cent, in all these cases despite a massive expansion of capacity (Caracciolo, 1969: 217). Capacity increased because the high returns stimulated investment in those firms that were able to benefit from the situation. Generous tax exemptions further helped well-connected industrial firms to increase their capital dramatically throughout the war. The net value of physical capital (net of assets written off during the year) in publicly listed companies rose by 200 million gold

lire in 1915 over 1913/14, the same in 1916, 800 million in 1917, 1.9 billion in 1918, and 1.4 billion in 1919 (Caracciolo, 1969: 216).

Two giants created by the war were the steel and engineering Ansaldo Group, led by the Perrone brothers, both of whom were members of UMI, and the engineering Breda Group, led by V.S. Breda, member of a Regional Committee; both required massive state intervention in the 1920s and 1930s. Another smelting giant, ILVA, headed by A. Luzzatto, and the aeronautics and engineering firm Caproni, led by G. Caproni, both members of UMI, fared no better. Of the firms that expanded during the war, the most successful in consolidating their gains in peacetime were FIAT and Pirelli, headed respectively by G. Agnelli and L. Pirelli, the former a member of UMI, the latter a member of one of the regional committees. During the war these two firms concentrated on what today would be called their “core competence,” while in most other cases cheap credit sent managers into uninhibited acquisition sprees. ILVA, Ansaldo, and Breda integrated upstream and downstream with the aim to achieve a “complete cycle” in which they would control everything from energy sources and suppliers of intermediate products to transport systems and even banks. The intended conglomerates may have been manageable as loose consortia, but by all accounts they lacked internal logic and did not even have compatible accounting procedures so that it was difficult for top managers to know how the whole concern was faring. Thanks to the peculiar conditions of Italian war finance massive amounts of financial and physical capital became locked up in these conglomerates.

Other consequences were more helpful to the long-term growth of Italy’s industrial sector. Perhaps the chemical and hydroelectric industries were the most evident success stories. The former increased the output of dyes, fertilisers, and sulphates and learned how to produce a vast range of synthetic chemicals from pigments to refractory tiles and to synthesise atmospheric nitrate. The growth in electricity generation for the first time supplied Italian industry with cheap energy not subject to interruption in case of war. It made cheap, flexible mechanical power available to small firms, a development that some economists have argued was in the long run extremely important in supporting small scale industry which, then as now, employed the bulk of the Italian manufacturing labour force (Cohen and Federico, 2001).

Less tangible improvements were also derived from the war effort. Growing plant size and the exposure of rising numbers of unskilled or semiskilled workers to complex industrial processes probably increased the know-how and human capital of the workforce. The experience accumulated during the war years may have helped managers in the industrial restructuring of the 1920s. Other sectors posted purely artificial gains that dissolved as soon as war conditions ceased: such was the case of mining, where low grade coal was extracted at uneconomic prices to replace dwindling foreign supplies.

Taken as a whole Italy’s war illustrates the limits to a sudden extension of state power in a market economy. Although the government took powers that were dictatorial in principle, in practice the government could not use them to the full. In the food market peasant agriculture and smallscale trade resisted regulation; requisitioning and price fixing seem to have been largely evaded. Regulation was more effective in the market

for military equipment, and there was a great increase in war production, but this came at a price. The state had to rely on private interests to supply the executive personnel and then found itself to some extent held at ransom by these same interests. Emergency laws allowed agents to become regulators who, not surprisingly, then gave themselves every possible break. Rather than the state dictating to industry the quality and prices of weapons, it was the industrial firms that set the quality standards of the products they sold (Ferrari, 1991: 673).

Thus the wide power granted to the state apparatus ended up in a sort of regulatory capture where large firms dictated prices and quality, while nobody was at the helm to oversee the consequences of their actions. The resulting soft budget constraints for the firms that kept the Italian front going imposes substantial costs on the Italian economy in the long run. To that soft budget constraint we now turn.

4. War Finance

4.1. Domestic Borrowing

Italy was a young state, but the Bank of Italy was even younger: by the war's outbreak, it had been in existence for just over 20 years. It was only one of three banks of issue; the other two were the Bank of Naples and the Bank of Sicily both of which, in practice, followed the lead of the Bank of Italy (Galassi, 1992). The war reduced the Bank's freedom of action in some ways, but enhanced other functions, first by expanding its technical competence and supervisory role, and secondly by giving it an intermediary role between the Treasury, private banks and the large industrial groups. The war gave the Bank a prominence it had not enjoyed beforehand, placing it firmly at the centre of that web of relations between public power, finance, and industry, that came to characterise Italy's economic development over the next decades (Toniolo, 1989; Zamagni, 1993: 243-303).

As befell other central banks, the Bank of Italy passed through three stages during the war: from managing the crisis of the summer of 1914 which continued, in Italy's case, through the subsequent ten months of neutrality, to financing a "short war" until early 1916, and eventually playing a leading role in reallocating resources to the public sector as the war proved neither short nor cheap.

The news that Russia was mobilising to support Serbia, arriving on Thursday, 30 July 1914, triggered a systemic loss of confidence. The Bank responded to the beginning of a run on Friday by suspending convertibility, successive increases of spot discount rates, and restrictions on credit advances. The measures culminated on 4 August in a moratorium for commercial banks (though not for banks of issue, which also accepted private deposits) and a compulsory extension of the maturity on all outstanding commercial paper. Despite opposing pressures the governor of the Bank, Bonaldo Stringher, maintained the moratorium throughout the period of neutrality as a form of protection for the Bank's freedom of manoeuvre in a moment when it found foreseeing how events would develop pretty well impossible.

The economy was already in a cyclical downturn and the threat to financial intermediation and a turn to cash had the potential to push it into recession; however, a significant fiscal stimulus kept it buoyant, with a 70 per cent increase in defence expenditures from August to December 1914 but only very marginal increases in taxation (Toniolo 1989, 27). In January 1915 the Finance Ministry sought to cover the widening deficit by issuing a bond known as the First National Loan and the Bank agreed to underwrite it. When the markets failed to take up the entire issue, the Bank duly purchased the remainder. The resulting monetary expansion covered 42 per cent of the public deficit for the fiscal year 1914/15, and almost doubled the bank's liabilities (Bachi, 1916: 194; Toniolo, 1989: 13, table 1).

Since 1907 the Bank had accepted *de facto* responsibility for the stability of credit provision in Italy (Bonelli, 1971). Now while it maintained the banking moratorium it also worked to set up a new source of credit to industry without exposing the banking system to a higher volume of potentially bad debts. A Royal Decree established the Consortium for Industrial Security Finance (*Consorzio per Sovvenzioni sui Valori Industriali*, CSVI), backed by private capital but headed by the Bank; it had the power to lend on less stringent security than commercial banks. The activity of CSVI during the war turned out to be modest *ex post* since other, richer sources of credit were made available, but the creation of the Consortium may have poured oil over the troubled waters of Italian banking *ex ante*. The CSVI later played a primary role in supporting Italian industry in the interwar years and financing World War II (Zamagni, 1993: 226-36; Zamagni, 1998).

By the outbreak of war in May 1915 the multiplier effects of defence spending and the assurance from the Bank of a liberal approach to rediscounting had restored financial confidence. Bank deposits started to rise after the declaration of war, and the generous attitude of AM to procurement financing meant that industrial financial needs were being met by public advances granted by Dallolio's open-handedness. Despite Stringher's misgivings (Toniolo, 1989: 35, 88-91) the clear backing of the Bank of Italy for easy credit and high bond prices, coupled with the continuing expectation of a short war, enabled the mushrooming public deficits of 1915/16 to be financed successfully by the Second and Third National Loans.

In this period high-powered money did not increase in real terms. Its nominal value rose by 27.5 per cent from mid-1915 to mid-1916 with a 27.3 per cent increase in wholesale prices (Toniolo, 1989: 45, 77; Ercolani, 1969: 458). The economy was fully employed, output was flat, and money was neutral.

During 1916 the expected real requirements of the war rose and its time horizon lengthened. Despite this the policy of financing the war by issuing public debt remained effective as the government effectively recycled its borrowing into procurement contracts. The pattern was broken in the days between the collapse of Italy's army at Caporetto and the creation of a new front on the Piave in the autumn of 1917, when the Bank issued money equal to 11 per cent of existing circulation in 10 days to forestall a run on the banking system. Otherwise the policy of relying on

debt finance rather than taxation or the printing press remained firmly in place.

In a way, the financial problem of funding the war effort solved itself. The economy was flush with liquidity at the same time as consumer goods were disappearing from shop shelves following the mandatory reallocation of resources to military needs. Employment and personal income were high but, with little available to buy, a significant monetary overhang was developing. Commercial bank deposits rose by a third in real terms between December 1914 and December 1916; private lending was quieter because government procurements and the willingness of AM to carry the burden of financing offered large rents to firms which could therefore self-finance to a degree hitherto unknown. As a result the commercial banks had no difficulty funding new public debt issues.

The Fourth National Loan in February 1917 encountered no particular obstacle, and financial markets continued to trade freely in short and medium term public debt (Toniolo, 1989: 51). After the monetary surge that followed Caporetto, the following year debt returned on its more customary values of around $\frac{3}{4}$ of public expenditures. The Fifth National Loan issued in January-February 1918 also reached its target subscription, although perhaps only thanks to a massive propaganda effort mounted by the new Minister of the Treasury, F.S. Nitti, who saw it as a way both of establishing the credibility of the new cabinet after the defeat at Caporetto and of reasserting the national will to continue fighting to the bitter end.

The Fifth was the last loan undertaken to finance the war effort. Before the year was out Stringher and the Bank became involved in the difficult negotiations over inter-allied war debts that were to cast such a long shadow over the following decade. The Bank's main worry ceased to be finding domestic finance for the war effort and became managing a weakening external position. Early debt issues had reassured the Bank of the ability of the domestic market to absorb large loans without unsettling the financial system. As public consumption climbed from around 10 per cent of GDP in 1913 to more than 40 per cent in 1917 (Table 5), and as Italy's weak endowment of raw materials bit deeper into its payments balance, the Bank focused increasingly on the problem of the exchange rate.

Insert Table 5.

4.2. The Exchange Rate and Allied Credits

The problem of Italy's external balance during the war years was simple: how could an economy lacking raw materials, and especially fossil fuels, fight an extended modern war? Italy's balance of payments credits were under attack on all sides: her domestic resources were being reallocated away from exports to military goods, the substantial emigrants' remittances and tourist revenues were shrinking, and the foreign private capital market was no longer there. Thus Italy's foreign constraint bit deep.

Having suspended convertibility, two options remained. The first was to let the currency depreciate and compress domestic living standards, the second, to borrow abroad. Squeezing consumption quickly encountered

the limits already described which were political, social, and economic. Depreciation did occur but it is not clear that any resources were freed for the war as a result. Instead, Italy had to borrow from its Allies not knowing whether its postwar export prospects would earn the foreign exchange necessary to repay the debts.

Financial matters did not feature much in the secret negotiations of early 1915 that led to the Treaty of London. Article 14 stated rather airily that the British government would “assist” Italy in raising a loan of “no less than” £50 million on the London market “at equitable terms.” Turning these fine words into reality proved difficult. The Bank of England was reluctant to “assist” a loan of that size without guarantees from Rome, and the British Treasury was keen to tie the funds to the purchase of British goods. The British were concerned for the weakness of the pound relative to the dollar that was already visible. The Italians for their part were reluctant to export much gold just as they were entering the war, and did not want to have the funds thus secured tied to British products. Under a subsequent agreement of June 1915 Italy agreed to deposit one sixth of the sum in gold with the Bank of England and secure the rest with a bond swap, pegging the *lira* at 28 to the pound (up 2.20 *lire* from the prewar rate, but down 3 *lire* from the average 1915 exchange rate of 31.00 *lire*) and agreeing to do “everything possible” to avoid encouraging gold flows from Britain.

The Italians remained worried throughout the summer that the credit obtained would run out too quickly, and in October they sought to negotiate further loans. Once again the sticking point proved to be the “buy British” clause. London would not yield because it wished to avoid further pressures on the pound. As the war went on these concerns only grew so that London increasingly insisted that Italian purchases involving US raw materials or component parts, i.e. virtually all of them, had to be paid for in dollars. In 1915, however, Italy still retained some room for manoeuvre because the full extent of its external weakness had not yet become apparent (Table 6). After the October agreement there was resentment in the Italian delegation at the “buy British” clause. Even though Italy never called upon the full credit of £122 million, delays and less than full co-operation on the part of Britain’s already hard pressed war industries in delivering the Italian contracts caused further grumbling in Rome throughout the early months of 1916. Equally resented was the condition imposed by Britain that Italian purchases abroad be handled exclusively through Allied supply organisations. In effect, Italy’s external weakness made her a junior partner in the Allied coalition.

Insert Table 6.

Even before the spring of 1916 Stringher was being advised that future borrowing would inevitably have to be raised on the US market (Toniolo, 1989: 39, n. 2). The Bank did not yet have an office anywhere in the USA, though the Bank of Naples and at least two private Italian banks were present in the New York market. It was not until late summer 1917 that the Bank secured an agreement with the US Federal Reserve and opened an office in New York (Toniolo, 1989: 50).

By then the Bank's attention was focused on the steady decline in the exchange rate. Among the currencies of the main Allied powers the *lira* was falling fastest and farthest (annual exchange rate indices are reported in Table 7). Foreign debt was little more than one sixth of total indebtedness at the time (Zamagni, 1993: 211) so there was not much concern for the real burden of the debt. Rather the problem with the depreciation was its inflationary impact, which was limited on the retail market but caused high rates of price increases for producer goods: from 1914 to 1917, retail prices rose 89 per cent but wholesale prices went up by 186 per cent (Zamagni, 1993: 213). The Bank realised that this was storing problems for the future as financial intermediaries would have trouble adjusting to a return to normality at the end of the war. Thus, while inflation would eventually reduce the real value of domestically-held public debt, in the short run it would render further borrowing necessary.

Insert Table 7.

Probably, traders were hedging against the *lira* precisely because its ongoing slide made it undesirable as an international asset. Stringher took a relatively complacent view. He may have underestimated the size of the capital outflow and in any event he believed the depreciation "would automatically bring about a healthy slowdown in imports and stimulate exports" (Toniolo, 1989: 48). Action was limited to the issuing of export permits conditionally upon producers' giving the Treasury the right of first refusal on foreign currency earnings. When the directors of the other banks of issue advised Stringher to intervene more forcefully, and even to set up a foreign exchange monopoly, he cited "conflicting interests [that] ... do not allow hurried or simple solutions" (Toniolo, 1989: 49). In short, little was done to prop up the *lira* until a change in government brought Nitti to the Treasury in mid-autumn 1917.

Nitti had a political view of the exchange rate problem, believing that it could be solved by energetic public action. Underlying the depreciation he saw a lack of confidence in Italy's ability to win the war and the defeatism of Italian bankers and financiers themselves who, it was well known, were avoiding the repatriation of foreign revenues (Toniolo, 1989: 46-7). Within days of taking office Nitti communicated to the heads of the main banks, including Stringher, that he intended set up a clearing office, the INC (*Istituto Nazionale Cambio*), with a monopoly of foreign currency trading. The Bank bowed to pressure. The only concession Nitti made to Stringher's concerns was to lift a requirement on all Italian citizens and companies to hand over all existing foreign balances to INC.

Underlying the difference between Stringher and Nitti was the latter's conviction that the war effort was being mismanaged, allowing massive profits to be accumulated into a few hands and permitting significant speculative flows that were, in his view, the real reason for the decline of the *lira*. Stringher saw the problem as Italy's weak trade balance and the disappearance of the prewar invisibles surplus. When his objections to INC were overridden he worked to reconcile the dissatisfied banking interests with the Treasury. As the exchange rate fell farther in the winter of 1917/18, in part certainly because operators were anticipating less attractive rates once the monopoly was set up, the Bank was drawn into

taking a considerably more active role in the exchange markets, a role that Stringher had hitherto seen as unnecessary if not harmful. Nitti meanwhile attributed the teething troubles that the INC encountered to the greed of particular banks some of which, e.g. *Banca Commerciale Italiana*, were perceived erroneously as tied to German interests. The Minister became ever more convinced of the need for compulsion while the Governor maintained that heavy-handed intervention was the problem (Toniolo, 1989: 56-9).

The INC lacked resources to sway the markets simply because Italy had small foreign reserves in the first place. Seeing the solution in further foreign loans, Nitti aimed straight at the American market. While the *lira* fell through the spring of 1918, Nitti negotiated a loan from the US Treasury and outlawed exporting currency or credit instruments from Italy. Once again, the Minister saw his role as remedying the harm done by the permissive approach taken by the previous war cabinets that had allowed the accumulation of extraordinary profits and their secreting abroad.

Under the American agreement a joint INC-Fed committee would examine Italian credit needs in the US market and provide support on the spot market for the *lira* while the US Treasury would finance dollar-denominated Italian import bills. In return, all Italian-owned dollar balances would be earmarked for settlement of Italy's debts with the US Treasury. Similar agreements with Britain and France followed. This brought all Italian purchases abroad under the control of Allied authorities and ended Italy's independence in the allocation of foreign balances. Since dollars were becoming the main means of international settlement, and pounds and francs took up any slack, the agreement with the US Treasury also terminated Italy's ability to run its own monetary policy.

Access to the American market did not end Italy's problems. The financing so expensively bought proved, however, inadequate. Britain insisted increasingly on being paid in dollars for purchases that involved American raw materials and components. In September 1918, Italian dollar-denominated purchases in third countries caused resistance in London once the original line of credit granted by the US treasury came to an end. British shipping firms were abruptly ordered to halt operations, pending renegotiations of the financial agreements with Italy. Italy's position in inter-Allied diplomacy has been described as that of "a beggar" (Forsyth, 1993: 165), and Italian financial weakness gave British and American diplomats room to obtain important trade concessions (Forsyth, 1993: 149-92). By the end of the war, Italy had run up a foreign debt virtually identical to Britain's on a GDP that was less than half the UK's; 56 per cent was owed to the UK, 40 per cent to the US, and the rest to France (Kindleberger, 1984: 307; Kindleberger, 1987: 307).

The foreign dimension of Italy's war effort is a story of growing weakness over the years of conflict. While Italian industry was able to provide synthetic replacements for many inputs, such categories as food, fuel, and minerals were not among them. Italy had no revenue to pay for an increased gap between imports and exports.

Fighting a war with one hand while holding out a hat with the other is a difficult act to carry through. Italy's weak position, economical and

financial as well as military, cast it as a junior partner at Versailles. Italian gains at the peace table were limited; not all the territories promised in the Treaty of London were in fact handed over, and no part of Germany's colonies. This was a consequence of Italy's own weaknesses, but domestic opinion did not see it that way. Italians had endured suffering and sacrifices during the war as heavy as those undergone by other nations but the results led to disappointment, and the myth of Italy's "stolen victory" added fuel to the increasingly nationalistic extremism of Mussolini's Black Shirts.

5. Conclusion

The economic history of Italy's participation in World War I shows successes and failures. On the positive side of the balance, Italy ended the war with a military victory and an economy that was largely intact: the economic mobilization did not bring about economic collapse and that alone, for a country of Italy's development level, was a substantial achievement. It is also possible that Italy did rather better than this, but for reasons that are explained in more detail in the Appendix we cannot be sure.

Italy's struggle for economic mobilization is exposed in three aspects of the achievement. First, Italian industry was not ready for a sustained war effort. This resulted partly from the lack of war preparations despite having had the opportunity to observe what had to be done elsewhere but the more important reason was Italy's "latecomer" status among industrial powers. Dalloio could overcome this weakness only by creating a hothouse for industrial expansion through generous procurement contracts. Additional output was achieved, though at the cost of significant disinvestment, notably in infrastructure and transport, and the increase could barely be sustained through 1917.

For the postwar period this expansion left a long hangover in the form of conglomerates that were assembled in a hurry under extreme conditions, heavily leveraged, and uncompetitive internationally. They were subsequently unable to generate revenues to match their indebtedness but immobilised much capital in a relatively poor economy and survived on periodic transfusions of public cash. The eventual creation of state holding companies in the early 1930s attempted to restructure the Italian industrial sector more from the ravages of wartime finance than from the disaster of the postwar depression.

A second aspect of Italy's mobilization struggle is war finance. In spite of early fears, massive military expenditures were funded with relative ease, partly because there was little to buy during the war years and liquidity was easily tied up in national loans on attractive terms. This stored inflation for the future, but from the perspective of the public purse rising prices could be just an efficient way of taxing by stealth. Other governments also became heavily indebted during the war, but what matters in the Italian case is that the high debt was superimposed on a divided country where the taxation required to balance the books eventually fuelled long standing grievances. The fiscal manoeuvres of the post-war years increased the polarisation and violence that helped Mussolini to power as the defender of law and order.

Third, a poor economy specialised in price-inelastic primary products and dependent on imports for food and fuel, Italy could not finance the imports necessary to mobilise her economy from her own resources. A capital importer even before the war, by 1918 Italy's external indebtedness was proportionally much higher than that of the UK. The industrial mobilization of the war years did not allow Italy to build up an external surplus afterwards. Given that richer, more developed economies had trouble disentangling themselves from postwar indebtedness, Italy was bound to struggle all the more.

Italy's wartime economic mobilization was successful in that it provided a sufficient basis for Italy to win its war. For the longer term there were also some long-term benefits including electrification and the accumulation of technical knowledge and experience, for example in the chemical industry. But the overall picture of long-term consequences is rather grim. With its internal divisions, Italy had barely emerged from one war before hurtling into a quarter century of dictatorship that ended in another.

**TABLE 1: Indices of Industrial Production, Selected Branches
(per cent of 1913/14)**

	Pig Iron	Steel	Cars	Aeroplanes	Aeroplane Engines	Locomotives
1913/14	100.0	100.0	100.0	...	...	100.0
1915	93.1	109.4	194.2	100.0	100.0	84.3
1916	115.0	137.6	218.8	328.5	371.0	24.8
1917	116.0	144.4	318.4	1,013.4	1,109.9	88.2
1918	77.3	101.1	280.0	17,075.9	24,455.4	16.5
1919	59.1	79.3	225.4	...	...	147.7
1920/21	36.7	79.9	199.1	...	...	140.5

	Railway Coaches	Ships	Sulphuric Acid	Nitric Acid	Electricity (kWh)
1913/14	100.0	100.0	100.0	100.0	100.0
1915	62.8	45.7	98.2	121.1	122.5
1916	39.7	146.7	...	...	143.5
1917	40.6	70.5	...	...	167.5
1918	48.7	114.3	97.9	46.7	180.1
1919	156.2	177.1	91.6	52.1	167.5
1920/21	115.2	211.4	90.0	45.6	193.3

Source: Zamagni (1993: 224).

TABLE 2: Weapons, War Matériel and Equipment for Use by the Military: Domestic Stocks and Output (units and per cent)

	Recorded Domestic Output, 1915-1918 (units)	Stock on Armistice Day (% of stock at declaration of war)
Light and Field Guns	...	382
Shells (thousand)	69,835	...
Rifles (thousand)	2,598	127
Machine Guns	...	32,207
Small Arms Ammunition (million)	3,616	...
Seaplanes	...	256
Aeroplanes	12,021	23,322
Aeroplane Engines	24,400	...
Automobiles	...	628
Lorries and Trucks	...	806
Motor Cycles	...	546
Tractors	...	800
Naval Ships	572	...
Submarines	71	...

Sources: Caracciolo (1969); Curami (1998); Zamagni (1993: 222); Segreto (1982); Romeo (1972: 118). Curami provides detailed lists classifying weapons by type and model.

TABLE 3: Private consumption per head (per cent of 1913 and constant prices)

	Total private consumption per head	Food consumption per head
1913	100.0	100.0
1914	99.0	101.8
1915	100.2	104.5
1916	102.6	106.7
1917	100.2	107.0
1918	106.2	116.1
1919	103.3	109.3
1920	111.0	111.2

Source: Rossi et al. (1993: Table 3A); Maddison (1995: Table A-3a)

TABLE 4. Investment (per cent of GDP at current prices)

	Gross Capital Formation		
	Fixed	Inventories	Total
1913	13.8	3.2	17.0
1914	13.2	-2.1	11.1
1915	8.9	-4.7	4.2
1916	6.3	-7.4	-1.1
1917	7.4	-8.3	-0.9
1918	6.4	-8.2	-1.8
1919	10.8	-6.3	4.5
1920	12.9	-1.2	11.7

Source: Rossi *et al.* (1993: Table 2B).

TABLE 5. Private and Public Consumption (per cent of GDP at current prices)

	Private consumption	Public consumption
1913	78.3	9.3
1914	77.3	14.1
1915	69.8	31.9
1916	71.7	40.8
1917	73.9	44.1
1918	74.0	42.8
1919	74.8	32.5
1920	84.5	18.2

Source: Rossi *et al.* (1993: Table 2B).

TABLE 6: Net Imports (per cent of GDP)

	Imports	Exports	Net imports
1913	16.0	11.4	4.6
1914	12.9	10.4	2.5
1915	15.3	9.3	6.0
1916	19.4	8.0	11.4
1917	23.2	6.2	17.0
1918	19.7	4.8	14.9
1919	19.2	7.4	11.8
1920	24.5	10.2	14.3

Source: Rossi *et al.* (1993: Table 2B).

TABLE 7: Indices of Average Annual Exchange Rates (unit prices in *lire*, arithmetic means, per cent of 1914).

	<i>Lire per</i> \$US	<i>Lire per</i> £	<i>Lire per</i> French Franc	Fine gold, <i>lire per</i> ounce
1914	100.0	100.0	100.0	105.8
1915	126.9	119.9	108.8	113.7
1916	130.0	126.1	113.7	121.8
1917	140.3	136.4	124.3	126.7
1918	148.7	145.4	136.8	141.3
1919	183.7	160.6	117.4	155.7
1920	401.3	299.6	141.2	290.0

Source: ASI, several years; ISTAT (1958); Ercolani (1969) .

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