

THE GREAT WAR: BACHI'S STATISTIC AND ECONOMIC-COMPARATIVE APPROACH/LA GRAN GUERRA: ENFOQUE ESTADÍSTICO Y ECONÓMICO-COMPARATIVO DE BACHI

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Resumen

Multifacético intelectual y experto en economía y estadística, Riccardo Bachi fue capaz de comprender, en tiempo real, las implicaciones a largo plazo que surgen en Italia como resultado de su participación en la guerra. Un objetivo esencial de este trabajo era explorar algunos aspectos metodológicos del análisis de Bachi, es decir, sus índices económicos, barómetros, termómetros y, en general, sus estadísticas económicas predictivas. El método estadístico comparativo, junto con el enfoque histórico-económico, hacen que el estudio de este economista sea muy interesante para la comunidad científica interesada en este período histórico, aun considerando que desarrolló su investigación cuando las fuentes estadísticas aún no estaban disponibles. Por último, pero no menos importante, podemos destacar la actividad de Bachi posterior a la guerra, comentando las consecuencias económicas y políticas del conflicto, con lo que, sorprendentemente, se habría anticipado al pensamiento de J.M. Keynes.

Palabras clave: Gran Guerra; Estadística; Índice.

Abstract

Multifaceted intellectual and expert in economics and statistics, Riccardo Bachi was able to understand, in real-time, the long-term implications arising in Italy as a result of involvement in the war. A essential objective of this paper meant to explore some methodological aspects of Bachi's analysis, i.e. his *economic indexes, barometers, thermometers* and generally his predictive economic statistics. The comparative statistical method together with the historical-economic approach, make the study of this economist very interesting for the scientific community interested in this historical period, even considering that he developed his research when the statistical sources were not yet available. The last but not the least, the post-war

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activities of Bachi in commenting on the economic and political consequences of the conflict, would have anticipated, surprisingly, the thought of J.M. Keynes.

Keywords: Great War; Statistics; Index.

1. Background

The opinion that the First World War, as opposed to any previous war, was heavily ruled by industrial and financial capital is widely shared by all literature. And, as to Italy, historiography confirms the assumption that the war sped up its inclusion in the list of most advanced capitalistic countries.

In the plentiful coverage given to the Great War, conceptual categories such as 'total war', 'industrial mobilisation', 'entrepreneurial-State' are widely mentioned: all notions that for us contemporary people are by now firmly substantiated, the result of decade-long research and accurate scientific investigations.

However, the fact such concepts had been developed with perfect long-sightedness by some scholars, who were very busily working during the War, is far less explored in historiography. One of such outstanding scholars is Riccardo Bachi, an economist with a background in statistics and accountancy, whose intellectual and biographical life is entwined with the overall life of Italian economy, before, during and after the Great War.

Riccardo Bachi –as we are going to argue in this paper– deserves to be mentioned not just for his scientific analysis of war economy but also for advancing the promotion of effective taxation, lending and currency policies in the post-war period.

After completing his studies at "Scuola Superiore di Commercio" in Venice (1896), Bachi extended his field of research to the application of statistics to political economy, from an economic semeiotic perspective. In addition, he stood out for his ability to understand the historical significance of a number of socio-economic phenomena to account for the setups of Italy's socio-economic system, using a diachronic, comparative method from the perspective of 'path dependence'.

His attendance of Salvatore Cognetti De Martiis' *Laboratorio di economia politica* in his hometown of Turin²; his work for the Labour Office of the *Ministero di Industria, Agricoltura e Commercio*, directed by Giovanni Montemartini³; his contributions for *Giornale degli economisti*, *Critica sociale*, *Nuova Antologia*, under Luigi Einaudi's aegis: all concurred in such systemic approach⁴.

² Marchionatti, Roberto (Ed.). 2009, 85-126.

³ Da Empoli, Domenico. 1984, 121-146.

⁴ The works on the Bachi's biography are very few. Among these were the following works: Resta 1951, 501-518; Ratti 1961, 15-19; Bonelli 1963, 48-53; Cassata 2009 a, 85-126,

The first issue of "*Italia Economica. Annuario della vita commerciale, industriale, agraria, bancaria, finanziaria e della politica economica*", a monumental work that received heart-felt accolades in Italy and abroad and which Bachi's reputation, as a statistic and an economist, would be linked to forever, dates back to 1909 and lasted until 1922.

With this work, which is the key source for the study of Italian economic trends and structural changes in the years of the World War, Bachi wanted to provide rulers, economists and the public opinion with key figures, within the limits of the available statistics, that could help understand the structure and the long –and short– term trends of Italian economy⁵.

When Italy went to war, Bachi was professor of statistics at the University of Macerata, but, despite his burdensome academic engagements and the problems created by the war, he kept collecting and processing statistics for his *Italia Economica*. On the back of such wide wealth of information, he could understand the far-ranging effects of war economy on Italy, pointing out that the 'entrepreneurial State' was irreversibly ruling over 'industrial mobilisation'⁶.

A first driver of this paper meant to explore some methodological aspects of Bachi's analysis, i.e. his *economic indexes, barometers, thermometers* and generally his predictive economic statistics. It should be emphasized that in the Bachi's thought, economic *barometers* and *thermometers* are algorithms that measure economic trends by looking at their key components (inflation rate, stock exchange indexes, consumer confidence, employment, etc.): such figures are filtered by the algorithm, processed and simplified into macro-trends that redefine the economic outlook and its evolution over time⁷.

This driver is followed by a description of his analysis of war economy by economic areas and scope; the third step wanted to look into Bachi's opinion of the structural consequences of war economy and the State policies implemented in response to the crisis of post-war reconversion. All this, without neglecting the international implications of post-war economy if it is true that Bachi, ideally in tune with Keynes, pointed at all the mistakes made by the winning powers in the management of the peace policies.

This work means to place emphasis on all such intuitions, their value as innovators and pioneers of the latest econometric analyses, their importance in terms of practical applications and historiography. We actually believe that it is on such methodological grounds, as well as on a diachronic perception of socio-economic phenomena, that Bachi's studies may gain their well-deserved scientific recognition.

⁵ Bonelli 1963, 49. Voice the Biographical dictionary of Italians.

⁶ It was introduced by law n. 99, June 26/1915. On the subject, see Segreto 1997, 1-17; Isnenghi, Rochat 2008, 297. Do not overlook, then, the model of the "military industrial complex", Pursell. 1972.

⁷ Bachi spoke on several occasions on the subject "*indexes, barometers, thermometers*". See, specifically, Bachi 1916; 1919 b; 1921; 1928.

2. Predictive economic methods and tool

A key feature of war economy was, according to Bachi, that no well-grounded economic forecasts could be made, even if no one denied how important they would have been. In peacetime –Bachi wrote–, predictions were based on the assessment of strictly economic forces and circumstances, and were built on econometric measures or statistic arguments.

In wartime, instead, they depended on the unpredictable occurrence of several ‘non-economic’ conditions, which made many long-term economic deeds random, and made the establishment of low-return ventures an exception rather than the rule⁸. And such an acknowledgement must have been quite painful for a scholar such as Bachi who had been one of the first in Italy to engage, in the early 20th century, in some fairly complicated reflections on *economic indexes, barometers, thermometers*⁹.

Note, in this respect, that the first “indici Bachi” used to be on a monthly basis, taking base=100 of the arithmetic mean of prices over the five years 1901-1905, out of a 40-commodity basket. The new post-war indexes were built instead on a rolling basis and a geometrical mean, clearly distancing themselves from the “de Foville Method” and the predictive economic statistic methods associated with Roger Babson in the US or Claude Percival Halley and Joseph Davies’ *Business Prospect Year Book* in the UK¹⁰.

Building indices on a rolling basis was hugely beneficial, since, as Bachi wrote:

“With a rolling base, the range of commodities may be varied, in terms of quality, source of information, markets, all changes that not only make the system more adaptable to the changeability of the general economic conditions but may also be used to overcome the problems resulting from the inadequate statistic material that has to be processed”¹¹.

As to his *economic barometers* and *thermometers*, Bachi explained that the sequence of steps in the business cycle was not synchronic for all phenomena and the recurrence of some of them was not enough, in a raw state, to predict their future position to a good approximation (*fluctuations*). Therefore, empirical series had to be reprocessed to remove the distorting effects of accidental and seasonal factors¹².

As we said, war economy did not help statistic surveys, even less the building of reliable *economic indexes, barometers, thermometers*, as Bachi complained on several occasions. Actually, ‘administered prices’ –of the goods, the trade of which was run by the

⁸ Bachi 1918 a, 2.

⁹ Bachi 1919.

¹⁰ Referring to the De Fovilles’ elaborations –as well as studies of Jannaccone, Pantaleoni, Benini, Mortara– Riccardo Bachi would place the analysis in key forecast indicators and barometers to the economic base of the processing contained in his books *Italia Economica* (1909-1921), Cassata 2009 b, 21-22.

¹¹ Bachi 1921, 213.

¹² Deblock 2000, 357-410.

government, as well as the pegged or otherwise price-controlled goods– were 'political prices', i.e. rates, not quotes based on free market conditions. Therefore, indices based on such man-made prices had a quite different meaning from those usually developed in peacetime¹³.

However, such gaps would have been filled by linear interpolation, assuming that in the time spans considered prices moved in an increasing or decreasing progression, and occasionally assuming the last known quote as nominally unchanged¹⁴.

Based on this, with the courage of a scholar who was not intimidated by the problems of the war, Bachi still attached importance to a number of economic factors, and actually the first "indici Bachi", used during the war to measure changes in prices, were an instant hit, both in Italy and in the rest of the world¹⁵.

A review and reprocessing of such indices provided a clear picture of price trends during the war, which we could sum up as follows: if the general price index increased by 344 points, the most remarkable increases concerned 'minerals and metals' (+750) and 'textiles' (+398), versus +209 in 'grains and meat' and +150 in 'other foodstuffs'. Such figures were an extremely clear proof of a more marked rise in the consumption of raw materials and textiles than in foodstuffs¹⁶

Many years later, Rosario Romeo¹⁷ –based on more reliable statistic sources– would point out that the general price index, set at 100 in 1913, had reached 409 in 1918, and that, in such inflationary scenario, private consumption had grown by 6.43%, while public consumption had grown by 450.30%. In foreign trade, almost completely in the hands of the State by then, the ratio of exports to imports, which was 75.6% in 1915, collapsed in 1918 (20%), while the volume of exports, taken on its own, shrunk to the 44% of pre-war times.

In this mammoth endeavour, all of the country's resources had to make their part, but it also meant that some of the national wealth had to be sacrificed: in the five years 1916-1920, overall consumption was 14.2% higher than the national income, which goes to show what a heavy burden this was for the country's wealth.

3. War as a national business

“The current war, far more than the majority of wars mentioned in history, shows the relevance of economic factors on its events. [Actually, the economic life of each warring country would have had strategic importance on the way the war panned

¹³ Bachi 1916, 1.

¹⁴ Bachi 1926; 1928; 1929.

¹⁵ Cassata, 2009 b, 20.

¹⁶ Bachi 1918 b, 41-42.

¹⁷ Romeo 1961, 115-116; Carreras, Felice 2010, 306-309. See also Istat, *Sommario di statistiche storiche italiane 1861-1955*, 53-154 (statistical tables n. 83 e 84).

out], and an interdependency of influences would have formed between war and economy”¹⁸.

As to Italy, while, on one hand, the war was a hiatus in the progressive development of our industrial system, on the other hand it sped up some of its still dormant tendencies, completing some of the processes that had already been started as part of peace economics, and in this respect Bachi –that was substantially favorable to our entry into war-listed– spoke of a “powerful accelerator of modernisation”¹⁹.

And these ones, developed in the midst of the war, were outstanding intuitions, which would be eventually embraced by economic literature. Let’s just mention the opinions of some very authoritative authors: Einaudi wrote that the Great War, as opposed to the previous ones, which had been waged for limited and specific goals, had been inspired by unlimited goals because it had been a war of capitals and industries²⁰; Caracciolo pointed to the disruptive innovation brought up by the World War and its tendency to speed up the pace of history, from the use of technology to the organisation of manufacturing²¹; Castronovo too pointed out that the War had catapulted Italy into the most advanced industrial world, since a number of events that had gradually taken place in Europe had happened at a chaotic whirlwind pace in Italy, after the war²².

According to Hobsbawm the First World War began as an inter-imperialist conflict among the leading capitalist powers. But it opened the way to a series of huge blows which, in this “Age of Catastrophe”, would threaten the continued existence of capitalism itself²³.

Especially Italy, the country latecomer for excellence, had gone to war totally unprepared and, despite feverishly multiplying its efforts to increase production through the logistics of ‘industrial mobilisation’, it failed to fill the gaps of its unpreparedness, thus paying for the deficiencies of a still weak, disjointed industrial system²⁴.

In 1918, when the war was not over yet, Bachi published his essay, *Economia di guerra*, in which he powerfully pointed out that the war had polarised every business and that the notions of ‘war as a national business’ and the State as the ‘supreme ruler of the economic system’ had overwhelmingly established themselves²⁵. This means that some obvious forms of State interference had been adopted (especially in the arms, mining and fuel industries) that ended up affecting the manufacturing cycles and the overall organisation of factory work.

As to production, having overcome the first few ‘bottlenecks’ due to the lack of labour, fuel and raw materials, the progress of ‘industrial mobilisation’ paved the way to a

¹⁸ Bachi 1918 c, 3.

¹⁹ Bachi 1919 c, XIII-XIV.

²⁰ Einaudi 1961, 206).

²¹ Caracciolo 1974, 188.

²² Castronovo 1982, 18.

²³ Hobsbawm, 1994, 42-44.

²⁴ Porosini 1975, 8-9.

²⁵ Bachi 1918 a, 9.

favourable economic climate, with factories being expanded, manufacturing cycles being structurally improved, and profits rising.

So, buoyed up by generous public tenders, many iron and steel, shipbuilding and mechanics factories grew and expanded, often without any cost-performance considerations in mind²⁶.

The State heavily interfered with farming too: as a matter of fact, while on the supply side the State tried to boost a quantitative rise in production, in its food-rationing policies it imposed strict limits on the production and sales of foodstuffs through 'ration cards' and fixed political 'ceiling prices'.

Moreover, the State implemented a monopolistic foreign-trade regime, so much that it was dubbed as a veritable "State trade", accounted for by the fact only the State could guarantee that those goods and raw materials that were considered to be strategic for war economy could be supplied at pegged prices²⁷.

A thorough review of the demand side showed that, as a consequence of the war, demand had massively shifted to buying goods required for the war itself, and such State-fuelled demand was extremely inflexible and eventually aggravated the dynamics of inflation.

This forcible shift to producing goods for the war itself also resulted in a remarkable increase in costs, due to the higher risk of transactions, the rise in the price of raw materials and transport, many companies' 'marginal' position after moving to other lines of business, through often-unnatural lateral and conglomerate diversification processes.

Then, Bachi gave pride of place to the banking movement, especially 'issuing banks'. Since the very beginning, he made a distinction between circulation "on account of trade" and circulation "on account of the State", and while the former went through steep highs (from 2,198 million in June 1914 to 2,652 million in May 1915 and to 2,997 million in November 1917), the latter, which was just about 133 million in August 1914, sprinted up to the hyperbolic levels of 1,120 million in May 1915 and 5,853 million by the end of 1917.

On their part, ordinary lending banks turned out to be completely unprepared to cope with the emergency of the war, not least because they were paying for the consequences of a previous reckless 'easy lending' policy, which has resulted in a state of illiquidity and poor financial health. However, once they found their feet, starting in 1916, in a general climate of productive euphoria, the lending business actually became manic. However, according to Bachi, this situation hid several risk profiles, since it would eventually promote speculative practices and dangerous 'oversizing'²⁸.

Closely related to this reflection, an analysis on inflation, something which not only made the bases of the economic system unnatural, but would also raise some very serious

²⁶ Bachi 1918 b, 30-34.

²⁷ Bachi 1918 b, 10-13.

²⁸ Bachi 1918 b, 14-16. Interestingly topic Cova 2002, 494.

problems when going back to normal manufacturing and trade conditions. Bachi pointed out that, while money circulation had increased at the first stage of war economy to ease lending and soothe the friction of the slowdown of currency, in the following years the uncontrolled issue of money wanted to help the government cover the ever-increasing costs of war. And inflation did not only result in a general increase in the price of goods, it also altered the free-trade mechanisms as well as remarkably shifting the distribution of wealth and eventually damaging the national Treasury too, by reducing the actual extent of taxation²⁹.

4. Post-war scenarios: conclusions or start-point?

Once the war came to an end, there was the widespread belief –ungrounded, according to Bachi– that economic life could resume as in peacetime, even if the sources of wartime uncertainty and instability were still there, and these factors were jointly economic, social and political in nature, on a domestic and international scale.

In the post-war period, business trends had been made extremely uncertain by the lack of measures about the removal of ‘industrial mobilisation’, money circulation, public finances, as well as doubts about new geopolitical set-ups and old international trade relations.

So, in the months straddling 1918 and 1919, turnovers were very muddled, and many frictions and obstacles to business were still going on. The main source of instability was continued inflation, which not only affected the general price levels and exchange rates, but also had extremely serious effects on the distribution of wealth.

Inflation –Bachi wrote– had very steeply shifted the distribution of wealth, creating lots of ‘unearned increments’, and had weakened the cohesive forces, which was a serious source of social instability³⁰.

Therefore, striving for a gradual return to ‘good money’ should have been the key priority of the new post-war Government, but it had to be only gradually accomplished, as deflation might have depressed industrial and trade businesses and might have reduced the demand for goods and loans. Actually, the effects of deflation were comparable to those of the rise in the official discount rate, which in itself caused business to shrink, income to collapse, and labour demand to fall³¹.

Then, Bachi engaged in a thorough analysis of changes in the labour market: through a number of devices the State had tried to bring as many labourers as possible to defence suppliers, and this had led to a growth in wages and intensive labour exploitation. This had caused a depletion in the human capital, compounded by the inadequate or non-redemption and replacement of some sections of the technical capital³².

²⁹ Bachi 1918 a, 13-14; Einaudi 1936, 268-273.

³⁰ Bachi 1919 c, IX.

³¹ Bachi 1919 a.

³² Bachi 1918 a, 21; see also Tomassini 1983, 79-102).

This is so far the real-time analysis of the effects of war economy on economic set-ups, but no less important was the review of the structural and economic consequences of a return to peace economics on the economic scenario.

This reflection came into its own in Bachi's *L'Italia economica nell'anno 1918*, in which the author disappointedly emphasised, once again, that since the end of the hostilities the wartime economic set-up had not stopped, but had actually blown up:

“The State has become the centre, the propeller of domestic economy, the ruler of the most varied operations, even more than ever before”³³.

Again, money circulation had kept running on like mad, producing its detrimental effects on the lending business, the price levels, the State's inflows and outflows:

“Great money circulation fictitiously swelled the banks' coffers; fuelled intense trading speculation; the mixed banks frantically engaged in a round of loans and mortgages with a boldness that looks excessive and fairly dangerous”³⁴.

And, with this note about the role of 'mixed banks', Riccardo Bachi surprisingly foreshadowed Raffaele Mattioli's famous dissertation, in the Sixties, about the dangers of relations between large banks, the world of finance, and big industrial concentrations³⁵.

After the War, public finance too showed a few heavy criticalities in terms of revenue and expenditure, and once again these figures were due to a decrease in the currency's value. In addition, the leadership of financial politics was less impactful than in wartime, since the State could no longer implement tax clampdowns so easily now³⁶.

Finally, we cannot fail to mention the international scenario: with the end of the war, no effective supranational body had been set up to achieve common goals, and the international community that had won the war had failed to lay the grounds for an optimum management of the problem of war debts and reparations³⁷.

With such considerations, Bachi –who however was not, nor would ever be, a 'latter-day Keynesian'– had shared, if not actually foreshadowed, Keynes' philosophy in *The Economic Consequences of the Peace* (1919). In this respect, to highlight the scholar's international profile, we cannot neglect the fact that at the end of the war Bachi had been appointed economic consultant to Italy at the Paris Peace Conference in 1919, where Keynes officially represented Great Britain.

All in all, as Bachi wrote, the war had left Italian economy tired and poor:

³³ Bachi 1919 c, VI.

³⁴ Bachi 1918 b, 18.

³⁵ Mattioli 1962, 28. On this topic, please refer to the following books: Zamagni 1993, 375; Cova 2002, 838.

³⁶ Bachi 1919 c, VI.

³⁷ Bachi 1919 c, VI.

- the public finance (central and local) seriously in the red;
- a deeply inflationary currency;
- a heavy public debt;
- the farming worn out by the disuse of several agricultural practices;
- the merchant navy and the railways damaged, thinned out;
- a heavy dependence on foreign trade for the purchase of raw materials and foodstuffs.

This sad list ended, though, with an optimistic note, since, apart from all these negative aspects, the war had somehow marked a turning point, an evolution, for Italian society and economy.

Nevertheless, Bachi made the country's ruling classes (the "new men") face the new, complex responsibilities of the post-war scenarios, since the reconstruction would have been a long, awesome feat. The new ruling classes would have had to find organic solutions to respond to the very serious problems of the economic and social scenarios, and, most importantly, "the political economy of the new age could no longer be empirical, as it had been all too often during the war"³⁸.

In this scenario, tax policies would become absolutely central, since, by redesigning a tax system inspired by equalising principles, far-ranging goals could have been accomplished, such as: stronger currency; more resources for the State's targeted growth and development plans; redressing the balance between different social classes depending on whether they had benefited from or had been damaged by war economy, all this while trying to steer clear of the extreme level i.e. the 'poverty line'³⁹.

Bachi's were brave, pioneering ideas, which, however, were not listened to, as they were too realistic to stand out in the chaotic plight that was the political, moral, social and economic crisis of the post-war period.

However, it was, and will be, up to those scholars who have understood the modernity of Bachi's approaches and the far-sightedness of his analyses and conclusions to put his role as a "social scientist" at the centre of the debate on the evolutionary scenarios of Italian economy and society in the years of the Great War.

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³⁸ Bachi 1919 c, XIV-XV.

³⁹ Bachi 1918 a, 25.

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