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► **To cite this version:**

François Facchini. Technocracy, Knowledge Regime and the Anti-free Market Attitude of French Economists. Journal des économistes et des études humaines, 2025, <10.1515/jeeh-2024-0016>. <hal-05037009>

HAL Id: hal-05037009

<https://hal.science/hal-05037009v1>

Submitted on 25 May 2025

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Article

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Technocracy, Knowledge Regime and the Anti-free Market Attitude of French Economists

<https://doi.org/10.1515/jeeh-2024-0016>

Received October 22, 2024; accepted March 20, 2025; published online April 16, 2025

Abstract: This article contributes to the economics of economics. It explains the distrust of French economists in the market economy and their interest in the construction of techniques to aid public decision-making. French economists are in favor of various forms of interventionism because they are hired by the government to produce the techniques of government that allow the State to replace the contract and the price mechanism and because to be an economist today one must unknowingly adopt a scientific posture, in other words learn the tools of government economics. The French *status quo* can partly be explained by this technocratic ideal of government.

Keywords: science; technocracy; liberalism; knowledge regime; economists; France

Résumé: Bertrand Lemennicier a contribué à un champ des sciences économiques peu connu, l'économie des sciences économiques. Cet article participe de cette recherche et explique l'attitude anti-économie de marché et pro-intervention publique des économistes français. Il utilise à cet effet la notion de régime de connaissance. Un régime de connaissance est un ensemble d'organisations et d'institutions qui génèrent des données, des recherches et des recommandations politiques et d'autres idées qui influencent le débat public et l'élaboration des politiques publiques (Campbell et Pedersen 2014. *The National Origins of Policy Ideas: Knowledge Regimes in the United States*. France, Germany, and Denmark: Princeton University Press). En France ce régime de connaissance est qualifié d'étatique. La France a quasi-nationalisé la production des sciences économiques car ses élites ont estimé au début des années trente que la démocratie parlementaire libérale avait échoué et qu'il fallait lui substituer un régime technocratique. La technocratie est un

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gouvernement par la science et de la science. En tant que gouvernement par la science, la technocratie investit dans la production de techniques de gouvernement et dans la diffusion de cette science dans des écoles spécialisées. La science économique devient un produit de l'investissement public et une technique de gouvernement. En tant que gouvernement de la science, la technocratie est scientifiquement non neutre. Car elle oriente sans les dicter les choix des savants, des économistes. Le bon économiste n'est pas un historien, mais un statisticien capable d'élaborer des modèles de prévision, des outils de planification urbaine, territoriale ou écologique, des instruments de comptabilité nationale, et/ou des calculs sur les inégalités de revenu ou de richesse. En privilégiant ce type de compétence, l'Etat provoque des effets d'éviction des autres manières de penser les sciences économiques et des effets de découverte. Les économistes français sont hostiles à l'économie de marché et favorable à des formes variées de dirigisme, dans ces conditions, parce qu'ils sont généralement embauchés par le gouvernement pour produire les techniques de gouvernement qui permettent à l'Etat de se substituer au contrat et au mécanisme des prix et parce que participer à la production de ces techniques de gouvernement il faut adopter implicitement une attitude scientiste qui conduit au constructivisme social.

Mots clés: science; technocratie; libéralisme; régime de connaissance; économistes; France

JEL Classification: A11

1 Introduction

Bertrand Lemennicier contributed to the development of a neglected field, the economics of economics (Wolfelsperger 1995). The economics of economics makes the economics that are in the process of becoming its object of study. It deals with disagreements between economists (Allègre 2015) as well as the reasons that lead economists to make decision and defend on idea over another. The economics of economics applies on this occasion the categories of the market to the production of ideas (Coase 1974). There is a supply, a demand and a price for economic ideas. The choice of individuals who wish to be economists depends on the rules of the game (institution). They maximize a utility function under constraint (Diamond 1988). They seek to earn more money and to be called good economists. They achieve their objectives from the moment they live off their knowledge: courses, articles, conferences, books, etc. Their notoriety is cumulative. It creates opportunities for them and brings them closer to political and administrative power. The constraints that weigh on the individual who has the ambition to be an economist can then impose on

him a research program, a method or a way of doing economic sciences. Academic prostitution to publish in a prestigious journal (Frey 2003), plagiarism (Enders and Hoover 2006), manipulation of his statistics and his significance test to obtain a publishable result (McCullough 2007) have become standard practice in modern economics. Economist can be a *truth seeker* or an *office seeker*. He seeks to make a good career. The history of economics is not in this sense independent of the history of the institutions that govern them. This is the starting point of this article. He argues that the scientific policies that were implemented in the mid-1940s in France to make government techniques available to the State profoundly changed French economics and favored the domination of dirigiste economists over liberal economists. The doctrinal non-neutrality of scientific policies explains the hostility of French economists to the free market.

The majority of French economists are indeed interventionist and develop an anti-free market attitude (Bobe and Etchegoyen 1981; Fourcade 2009, p. 6 Table 0–2; Frey 1988; Lemennicier, Marrot, and Setbon 1990; Mayer and Wasmer 2010).

Mayer and Wasmer (2010) even note that a French economist who has practiced his profession abroad has greater confidence in market mechanisms (prices) than the average. They also observe that the preference for interventionism is less strong among professors and research directors, who are generally more in contact with foreign countries and their results. It is logical, under these conditions, to note that the reports produced by economists to help the government make good public policy decisions are always unfavorable to market solutions and favorable to solutions in which the public and private sectors act in a complementary manner (Campbell and Pedersen 2014, p. 306). This singularity must be placed in the debates around the anti-market attitude of intellectuals in general (Boudon 2004; François and Magni-Berton 2015; Rios and Magni-Berton 2003) and economists in particular (Brookes 2021; Schweitzer 2023; Wolfelsperger 2002, 2006-2007).

The explanation proposed in this article is of an institutional nature. It is placed in the perspectives opened by Fourcade (2009), Campbell and Pedersen (2014) and Brookes (2021). Its originality is to link it to the study of scientific policies (Butos and McQuade 2006, 2012; Scheall, Butos, and McQuade 2019). The consolidation of the technocratic regime required a scientific policy to produce the instruments of scientific government that a government by science needs. Economists were funded to produce this technoscience. The definition of the economist, of the good economist, then changed under the effect of this policy which funded many economic engineers to develop the instruments of economic policy, and in particular macroeconomic models and national accounting.

Technocracy has thus produced a knowledge regime that is unfavourable to the market economy. A knowledge regime is a set of organisations and institutions that generate data, research and policy recommendations and other ideas that

influence public debate and the development of public policies (Campbell and Pedersen 2014, p. 3). The French knowledge regime is described as statist (Brookes 2021; Campbell and Pedersen 2014; Fourcade 2009). French economists are essentially financed by taxes. Such a regime greatly increases the costs of justifying pro-market positions (Facchini 2016).

The knowledge produced by the majority of economists is pro-public regulation. The probability of finding a study unfavorable to the market economy already published is much higher than the probability of reading a study favorable to private regulation. The journals, the commissions of specialists, the courses in the most prestigious schools and universities are then on average made by economists favorable to public regulation. Which creates as many barriers to entry into the knowledge market and obstacles to the production of knowledge favorable to the free market economy. The opposite is true. The knowledge available on the failures of the State and public regulation measures is much less voluminous. The journalists have access in this sense only to knowledge hostile to private regulation and favorable to public regulation. Which distorts public opinion and its relationship to economic reality and ultimately to the economic discourse of political parties.

France has not, however, always had such a knowledge regime. In the 19th century, its knowledge regime in economic sciences in particular was private and dominated by the classical school resulting from the work of Jean-Baptiste Say. Economists were entrepreneurs, self-taught men who published in the *Journal des Economistes* and debated at the *Société d'économie politique*. They were organized around the figure of Jean-Baptiste Say and were at the origin of a French school of political economy. A school favorable to regulation by prices and competition.

It is also against this school that the State institutionalized the profession of economists by making it a discipline taught in law schools. The creation of the *Revue d'Economie Politique* and the economic sciences option in the competitive examination for the agrégation of law schools were the means of creating against the classical French school an institutionalist school more favorable to protectionism and public intervention (Facchini 2024).

The consequence was a loss of influence of the liberal school from the end of the 19th century in French faculties and the constitution of a French historical school. A school that was in the majority in law faculties in the 1930s (Facchini 2024). Which contradicts the idea that the influence of liberal doctrines would explain the economic disaster of France during the 1930s. We identify the criticism of the economic engineers of the École Polytechnique towards the literary economists of the faculties and the justification of a model of government by numbers. The contempt that these critics reveal recalls the contempt of Karl Marx towards Jean-Baptiste Say whom he describes as insipid (Marx [1844] 1968, p. 460), but also the judgment of

Jean Tirole (2016, p. 597) who speaks of the ideologues of laissez-faire and not of economic sciences when it comes to dealing with the question of deregulation. This same contempt was also expressed during the appointment of the economist Pascal Salin as president of the *Jury d'agrégation de l'enseignement supérieur*, on which Bertrand Lemennicier sat. The main argument of the profession was that they were dogmatic, incompetent and ultimately illegitimate, because instead of selecting candidates on their skills, they had selected them on their ideology (Legendre and Lhorty 2004 ¹).

To document the links between technocracy and the singularity of French economists, this article is organized as follows. It defines the technocratic ideal in three words: scientism, planning and anti-liberal (1). The anti-liberal prejudice founds technocracy. It then describes how the government and its administration concretely realize its technocratic ideal. Concretely, a technocracy supposes the financing by taxes of administrations dedicated to the production of statistics and government techniques (2). This massive public investment has profoundly changed the French knowledge regime. This regime has become state-based. A state knowledge regime is a regime in which political and administrative elites influence the content of science by their choices of scientific policy (3). These scientific policies are not neutral. They finance the production of economic science that is useful to the government and not a science that could call into question its choices, and in particular the choice to replace private regulation by prices with public regulation by tax, public spending and law. It is this knowledge regime implemented after the Second World War that explains the anti-market and pro-public regulation attitude of French economists. The consequence is a quasi-public monopoly of public administrations on the production of economic science and significant failures in the political learning process. The pro-public regulation bias of French economists prevents political and administrative elites from perceiving the extent of the failures of public regulation and the interest that there would be in restoring their place to all the regulatory instruments available to private orders (3).

2 The Ideal of Government by Science

Technocracy is a political ideal. It is built on a critique of parliamentary democracy and capitalism (a). It advocates government through science (b). To the question of who should govern, the technocratic ideal answers, the technicians, in other

¹ Journal. Libération. Link: https://www.liberation.fr/societe/2004/02/24/opa-ultraliberale-sur-l-agregation-d-economie_469997/ (accessed 09/22/2024).

words those who know the techniques of government, those who are trained in technoscience.

One of the most prominent proponents of this position is the French Nobel Prize winner in economics, Jean Tirole (2016) who in his book “*Economie du bien commun*” answers the question “when should decision-making power be given to the political sphere” as follows. *A priori*, the political process seems more appropriate for societal choices familiar to the entire electorate. On the other hand, technical decisions are subject to a poor understanding of the electorate and therefore to a failure of the democratic mechanism. How many voters start a doctorate in economics to better understand the issues of unbundling, the local telecommunications loop or monetary policy, and thus vote in a more informed manner (Tirole 2016, p. 223).

The failure of the democratic mechanism is twofold. Voters do not make the right decisions. The regulator is on technical decisions, subject to capture of the regulator by the most financially powerful interest groups or the best organized media groups (Tirole 2016, p. 223). The solution is the delegation of technical choices to independent administrative authorities who will regulate the economy thanks to their knowledge, to the quality of their expertise (Tirole 2016, p. 225). Jean Tirole is the ideal type of the economist engineer. He studied at the *École Polytechnique* and contributed to the formalization of agency models (principal – agent). He places himself in a long tradition of economist engineers who theorize *Epistocracy* against liberal democracy.

2.1 An Observation of the Failure of Parliamentary Democracy

Technocracy as a political regime is built on the cognitive failures of parliamentary democracy. These failures are the instability of government, the incompetence of voters and the demagoguery of elected officials.

- (i) Government instability is the consequence of elections. Giving the administration power compensates for this instability. It counters instability with the continuity of administrative management of public affairs.
- (ii) The incompetence of voters is all the more damaging because democracy is the government of the people. An incompetent people imposes bad choices on governments. The incompetence of voters is very real. It has been documented by numerous surveys (Facchini 2017). The solution is to replace the voter as the principal with the scholar. The scholar is the only one who can give content to the concept of general interest. He is the only one who can place himself above the particular interests that animate parliamentary debates. The scholar must allow politics to avoid ideological quarrels (Meynaud 1960, p. 63) and to serve the

general interest. Technocracy is democratic if it is the expression of a demand from voters who admit their incompetence and agree to delegate their power to scholars, to the administration. Technocracy replaces sterile ideological divisions (left/right or social change *versus* conservative) with a political process that seeks consensus. It substitutes a consensual society for democratic society (Barets 1963; Birnbaum 1975).

- (iii) The demagoguery of elected officials is another weakness of parliamentary democracy. Ignorant voters could elect learned elected officials. Democracy could be an elective aristocracy (Roederer 1853–1859). Voters would delegate political choices to scholars and not to the rich (economic aristocracy) or to nobles (aristocracy of birth). The electoral process does not guarantee such a result, however, because voters favor ideological affinity. They do not reward competence. They choose sophists. They turn away from scholars. However, sophists manipulate the masses through their rhetoric. They are also disinterested in the true nature of things. They turn deliberation between elected officials into a “*verboocracy*”. Their only goal is to persuade others. They want to seduce and turn away from all searches for the truth.

Democracy becomes the government of sophists, of opinion rather than the government of knowledge. This would explain the weak cognitive qualities of democracy. It would explain the demagoguery of parliamentary liberal democracies. The demagogue agreed on the basis of stereotypes (Plato, *The Republic*, section 493a). He does not seek to thwart him. He is fundamentally conformist (Plato *The Republic* Book VI). He can even use the distribution of privileges to win. The demagogue is not only a rhetorician. It is not only a sophist. He is also a corrupter (Plato *Gorgias*). He promises benefits to some financed by taxes. He is the figure of Aristophanes. Not being a conformist and a corrupter is taking the risk of losing elections. It is necessary to flatter the masses and buy them. The modern technocratic model is the heir to these critiques of democracy and the defense of government by scholars.² It “*orders the ignorant to obey and the wise to guide and command*” (Plato, *The Law* [690c]).

2.2 Technocracy as a Solution

To compensate for the misdeeds of the “peaceful ignorance” of voters and the demagoguery of elected officials, the technocratic ideal proposes to enforce a

² Alfred Sauvy, for example, is concerned about the powerful who seek in all countries to please more than to enlighten and singularly neglect the art of enlightening while pleasing (Sauvy 1990, cited by Dumont 2020, p.3).

government of scholars and to extend it to all areas of life. Doctors deal with health issues, sociologists with social issues and economists with economic issues (growth, unemployment, inflation, income, purchasing power, etc.). The economist recognizes “the responsibility to advise the statesman”, because “the proper functioning of the economy cannot be brought about either by the free mechanism of prices and incomes, or by the free choice of ballot papers” (Boudeville 1954, p. 280). The government of scholars is transformed here into the government of a certain form of economists. It substitutes science for prices and voting.

Initially, the technocratic ideal is a philosophical ideal, a government of philosophers and not a government of scientists. The difference is important, because modern science stands against metaphysics. It develops with the Vienna Circle and the neo-positive philosophy of science a critique of philosophy and more generally of all knowledge that does not mobilize statistics or mathematical language. This conception of science was born in the 17th century with the mathematization of nature (Husserl 1949, p. 249). It is built against religions and metaphysics. It considers that it is the only legitimate one when it comes to telling the true and the false. It has a claim,³ to make useful and not only speculative knowledge available to men. Science, to be useful, must design technical solutions. Technocracy becomes a technical government, of engineers (Hayek 1952b, p. 152).

The figure of the engineer embodies the positivist ideal of the Saint-Simonians and Auguste Comte. Technocracy substitutes the engineer for the owner of liberal democracy. This ideal has already been by the utopias of Campanella ([1602]) and Bacon ([1627] [1995]). In Campanella’s *City of the Sun*, science and mathematics have a metaphysical dimension, because science accesses the knowledge of God. It breaks with chance (Servier 1967, p. 148). It makes man a prophet capable of warding off chance through his knowledge of the future. Science thus stands against divine paternalism. It announces the possibility of an order in which man has the means to direct the course of his history. In technocratic voluntarism there is a promise of the redemption of man by man. The engineer promises technical efficiency. He bases his choices on knowledge of the scientific law. This knowledge allows him to manipulate reality. If I know that A causes B, I can modify A to act on B. Modern science thus gives hope of transforming nature (Schuhl 1938) and the social order. The social order, the economic order must no longer be left to itself. It must be governed. The techniques of government produced by modern economic sciences are the knowledge necessary for the realization of this ideal.

Social engineers produce this knowledge. They adopt the method of natural sciences (Hayek 1952a, p. 12) to be able to manipulate it. The government no longer decides on the basis of general and woolly deliberations. They decide on the basis

3 We think here of the works of Galileo, Descartes and Newton.

of numerical models, scientifically established facts interpreted by specialists (Harding 1947). Scientists provide the government with a science that allows them to “treat the problems of government with the methodical rigor of research undertaken in physics or biology” (Dubois 1930). Science is the antidote to chance. Its watchword is “*gain knowledge, become prophets*” (Charpak and Omnes 2004). The application of this watchword to economic science corresponds to the definition that Pierre Massé (1965, 2007) gives of planning. Planning is an antihazard, an antidote to hazard. Campanella in *The City of the Sun* defended this same ideal. Knowledge of the law of God was sacred and led to God. It led to excluding any form of luck or chance (Servier 1967, p. 148). No longer relying on the chatter of the “*verbocracy*” of parliamentary democracies is therefore giving oneself the means to limit political economic errors. It is protecting oneself against the disasters of the 1929 crisis.

Government by science is not in this sense government by philosophy, but government by numbers. True science is mathematical and statistical. It has forecasting models and robust planning techniques. It is neutral. It is capable of substituting rationing by monetary prices with rationing by quantities, because it has statistical information collected by administrations dedicated to this task. These statistics allow governments to predict the future and to do better than the market.

From the 1930s, many intellectuals, engineers and scientists would share this ideal. The engineers of the *X-Crise* group, in particular, believed in this ideal. They would be one of the linchpins of its implementation (Dard 1995; Fischman and Lendjel 2006). This group was created in 1931 (Guitton 1982). It was initially pluralist, but very quickly transformed into a group in favor of the managed economy. Just as Thomas More in 1516 had contempt for scholasticism and admiration for mathematics, the members of the *X-Crise* group have contempt for the economists, historians and literary scholars of law schools. They only respect scientists trained in mathematics and statistics. The government of numbers is their only ideal. These members of the *X-Crise* group occupy many commissions that will prepare the transformation of democracy into technocracy. Ernest Mercier (X-1897) was a member of the X-crisis group. In 1925, he founded the French recovery (*Redressement*) movement, whose missions were to bring together the elites and educate the masses. The members of this group also participated in Pierre Laval’s axe commission (decree of Paul Raynaud) and inspired the creation of a Ministry of National Economy. Charles Spinasse was in charge of it from June 1936 to June 1937. He was surrounded by Alfred Sauvy (X-1920) (Dumont 2020) and Jean Coutrot (X-1913) (Dard 1999 p. 57).

Jean Milhaud (X) anticipated the school of public management by creating a Committee for the rationalization of the administration (Siwek-Pouydesseau 2006). Jules Corréard (X-1894) created the national association for the organization of democracy (Thuillier 1982). The engineer economist Jean Fourastié (1949, p. 215)

places all his hopes in scientific progress to achieve social progress. The macro-economist Edmond Malinvaud also shares this ideal. Good economic science can allow the government to correct market failures and protect the masses against economic ills, i.e. crises and fluctuations.⁴

The technocratic ideal is therefore based on a critique of both parliamentary democracy and economic liberalism. The prerequisite for its implementation is the production of this science of government which must replace price and voting.

3 History of Technocracy in France

This ideal of government was gradually established in France from the 1930s. It dedicated administrations, on the one hand, to the development of government techniques (a) and schools, on the other hand, to its teaching (b).

3.1 The Production of an Operational Science

Technocracy began to replace party democracy from 1934. It was built around administrations, producers of techno-sciences (Rouban 1989), operational sciences (Rouban 1988, p. 327), and financed by taxes.

The first steps of governments based on renewed economic knowledge and freed from the incompetence of literary economists can be dated to 1934, the date of the creation of a Council equivalent to the general staff of an army. This Council's mission was to implement an economic policy informed by the technical expertise of poly-technic economists.

The Vichy regime reinforced this taste for dirigisme by investing in the development of the first planning instruments and by creating most of the organizations that would become the backbone of the government through technology. These administrative elites of the Vichy regime would, for the most part, remain in place after the German defeat and take advantage of the reconstruction to develop a policy of forced modernization. They would even inspire European construction (Thoenig 2000).

The Fourth Republic did not break with this ideal. Its leaders would continue to invest taxes in the production of figures and planning models. The Fifth Republic would only have to implement a regime in which the president was elected by universal suffrage and where ministers could not be elected, but appointed for their

⁴ The *X-Group* group is now succeeded by the *X-sursaut* group, which has the same faith in science, technology and rationalization (Fischman et al. 2006).

skills to consolidate this model of government. The difference between Vichy and the Fourth Republic is doctrinal. Vichy has a corporatist ideal (Pollak 1976, p. 106). The Fourth Republic has an interventionist ideal.

The most important period was in the 1940s. Most of the administrations dedicated to the new science were created in the 1940s. We can cite (1) the National Institute for Agronomic Research (INRA) (Cornu, Valceschini, and Maeght-Bournay 2018), (2) the National Center for Scientific Research (CNRS), (3) the National Institute of Hygiene (1942) which after the war took the name INSERM, (4) the Alexis Carrel Foundation which is the ancestor of the INED, (5) the office for colonial scientific research also created by the Vichy regime which will become the ORSTOM, (6) the National Institute of Statistics and Economic Studies (INSEE ⁵) which replaced the general statistics of France in 1946, (7) the Atomic Energy Commission (1945) (Roche 2015), (8) the Planning Commission (1946–2006) (Djelic 1996; Sauvy 1970, p. 29), (9) the services of national accounting, (10) the Forecasting Directorate at the Ministry of Finance and (11) the Central Committee for Investigations into the Cost and Performance of Public Services (1946) (Séguin et al. 2007⁶).

All these administrations dedicated to the new science are publicly funded and give France the state knowledge regime discussed by sociologists and economists of economic sciences (*state ideas*) (Campbell and Pedersen 2014; Fourcade 2009). The implementation of technocracy has given public administrations a quasi-monopoly on the production of economic sciences and sciences in general (Campbell and Pedersen 2014, pp. 90–93). It has marginalized public universities, which today play almost no role in the formation of public policies (Campbell and Pedersen 2014, p. 101). Only the “*grandes écoles*” influence economic policy choices *through* their training, but also their research centers.

It must be admitted that this model of state knowledge has opened up somewhat to competition through the creation of semi-public organizations (i) such as OFCE, CEPREMAP, IRES, CEPII and IFRI (Campbell and Pedersen 2014 pp. 93–95), (ii) funding by private donations from *think tanks* (Institut Montaigne, and IFRAP), political foundations (Gabriel Peri, Jean Jaurès, Pour l’innovation politique, Robert Schuman), and clubs such as the Institut de l’entreprise (IDEP) or the Institut Choiseul, but the majority of knowledge is produced by public administrations such as the National

5 INSEE. 1946–2016: INSEE has been measuring the French economy and society for 70 years now, Link: <https://www.insee.fr/fr/information/2118593> (accessed 12/21/2022).

6 Established by the decree of 9 August 1946, the Central Committee for Inquiry into the Cost and Performance of Public Services is tasked with seeking and proposing measures to achieve savings in the operation of ministries, public institutions, local authorities, companies or organisations in which the State has a financial stake of more than 20 % of the share capital, as well as services or organisations that have received subsidies, advances or guarantees from the Treasury. This committee of inquiry is abolished by Article 180 of Decree No. 2017-671 of 28 April 2017 (Séguin et al. 2007).

Institute of Statistics and Economic Studies, the CNIS (National Council for Economic Information), the CREST (Centre for Research in Statistical Economics), the DGT (General Directorate of the Treasury, which replaced the DGTPE, General Directorate of the Treasury and Economic Policy in 2010), the DRESS (Directorate of Research, Studies, Evaluation and Statistics), the CAE (Centre for Economic Analysis) and the CAS (Centre for Strategic Analysis, the new name for the General Planning Commission).

Several facts support this position. No private organization has the means to produce its own statistics. A simple comparison of the budgets of public and private organizations shows that the resources made available to public administrations are much greater than the budgets available to private organizations. In 1937, the staff of the General Statistics of France amounted to 137 (Touchelay 1990, p. 292). In 2023, 5,295 people worked for INSEE (Source INSEE Women and Men of INSEE), for a total budget of 458 million euros in 2023 (Finance Law, Ministry of the Economy, Statistics and Economic Studies line). In 2020, INRAE employed 8,281 permanent staff (including 1,997 researchers) and 2,749 contract staff in full-time equivalent worked. Its revenues were almost one billion euros. In 1958, its budget was around three billion old francs (Bustarret 1959). These sums can be compared with the budget of *think tanks* (Brookes 2021, p. 226). In 2013, IFRAP announced a budget of one million euros, the Institute of Enterprise two million (Brookes 2021, p. 228).

The dependence of all private or public organizations on INSEE statistics makes national statistics a strategic variable. By definition, government by numbers gives great power to those who produce the numbers.

The quality of the figure is a guarantee of serious public management. It is the expression of a scientific political argument. It is even the only one that can say what is objective. Because only a statistically significant coefficient says what is objective and can ultimately justify a choice of public policy. All reports to the government are built on statistics, graphs, calculations, models, predictions. One of the first reports to have taken this form was Clémentel report of 1919 (Letté 2011⁷). The role of these reports is poorly understood (Caby and Chailleux 2019), but before each law, reports to the government, to Parliament and more generally to administrations are ordered. They line up figures that are supposed to help parliamentarians get an idea of what reality is.

7 This report defended a productivist policy. It proposed breaking with liberalism but not embarking on the collectivist path (Letté 2011, p. 46). This report was not followed by any action, but it outlined the contours of the directed economy that would be implemented at the liberation (1945). It is one of the first traces of the popularity in the senior administration of this way of seeing, of thinking, “of this technocratic hold on economic and social policy at the end of the war” (Letté 2011, p. 47).

The more the State intervenes in various fields, the more it needs figures. The more it invests in statistics (Pollak 1976, p. 107). The more the INSEE budget increases. Technocracy thus opens up an enormous public market to statisticians and to all the social sciences that agree to adopt scientism as a philosophy of knowledge. There is a real financial interest for statisticians, social engineers in technocratic consolidation.

The reverse is also true. There is a real cost for all those who do not share the technocratic ideal. Because their knowledge, their competence is disqualified in the first sense. Their competence is no longer recognized as knowledge. It is a matter of opinion because they have not succeeded in being the subject of a statistical study.

The quality of the figures also determines the quality of the forecasts of macroeconomic models and planning and forecasting models. The State in fact puts its statistics at its service by using them to anticipate the future, predict crises, calculate the amount of resources it needs to adjust its public spending to its tax revenues. Statistics are at the service of the State (Désrosières 1989). Producing macroeconomic planning and modeling tools is essential to direct the economy, to give it the right direction (Dulong 1997, p. 14). The central hypothesis is obviously that direction by technoscience can do better than direction by literary economics and direction by market prices.

Precisely predicting the economic situation to steer the national economy and vote on the finance law became the norm (decree of February 18, 1952⁸). The forecast was in the hands of the Economic and Financial Studies Department (SEEF), the Planning Commission or, from 1965, the Forecasting Department of the Ministry of Economy and Finance (Armatte 2007; Terray 2002).

Initially, the Planning Commission collaborated with the national accounting departments to measure production and build forecast accounts (Sauvy 1970, p. 30). The first forecast accounts were proposed in 1948. From 1950, the work of the commission was taken over by the Ministry of Finance and the SEEF. This department was under the direction of the Treasury and MC Gruson. Gradually, however, the SEEF and the Planning Commission disagreed on what a good forecast should be. The SEEFs have a more forward-looking and macroeconomic vision, while the Planning Commission hopes to provide accurate forecasts (Kolopp 2013, p. 64). The title of the 1969 article by Aglietta and Courbis expresses this taste for accuracy, “*the FIFI model, a tool of the plan*”. FIFI, the two economists affirm, constitutes a reduced model of the entire economy. It simulates its interdependencies. It allows the study on a model of possible futures, and the effects of the various economic

⁸ In 1956, all finance bills had to be justified by economic forecasts. The 1956 decree created in budgetary law the obligation for the government to make available to parliamentarians an economic report and a financial report.

policies that can be imagined in the context of the preparation of the Vith plan. Always the same idea, to build prediction tools to protect against chance.

3.2 A Science of Government Taught “*Grandes Écoles*”

Once these figures have been produced and these models have been developed, they must be taught to future administrative elites. The techniques of government by numbers are taught in dedicated schools. The *École Polytechnique*, the *Institut d'Études Politiques de Paris* (IEPP) and the *École nationale d'administration* (ENA), now the Institut Supérieur du Service Public, have this role.

The *École Polytechnique* carries the technocratic ideal before the word technocracy was used in social science. It is, according to Friedrich Hayek's expression (Hayek 1952, Part II, Chapter 1), the source of scientific pride par excellence. It teaches the future engineer to give meaning only to things that have been deliberately constructed. It trains social engineers (Belhoste 2003) for the function of economic management. The *École Polytechnique* has, for these reasons, an essential role in the administrative management of social problems and in the management of social expertise (Shinn 1980).

Most of the administrators of the National Institute of Statistics and Economic Studies (INSEE) come from the *École Polytechnique* (Touchelay 1990, p. 311). C. Gruson (X 1929), Ripert (X 1929), Malinvaud (X 42), Milleron (X 58), Michel Aglietta (X-59 and member of the French Communist Party, [PCF]), Henri Sterdyniak (X 73, member of the PCF), Mairesse (X 60) are all polytechnicians. These INSEE administrators move from one organization to another. They work at INSEE, in planning, in the forecasting department, in the national accounting department and in ministries with a technical department (Touchelay 1990, p. 311). At the forecasting department of the Ministry of Economy and Finance, the management and executives are polytechnicians. The first director is Hubert Lévy-Lambert (X-53). Philippe Herzog (X-59), member of the Communist Party, future Associate Professor of Faculties and originator of the ZOGOL forecasting model, Bernard Billaudot (X-60) member of the forecasting management since its creation, Robert Boyer (X-62) specialist in anticipation models and Jacques Mazier (X-66) were all in the forecasting management. They are all close to the left-wing parties and develop the planning ideal with public funds. Bernard Walliser (X-65) obtained his first position in the forecasting management and then specialized in public economic calculation and the rationalization of budgetary choices. Roger Guesnerie (X-62) specialized in public economic calculation and began his career at CERMAP (Centre for Applied Mathematical Studies and Research in Planning).

All these engineers work with former students of the *Ecole Libre des Sciences Politiques* (ELSP, which became the *Institut d'Etudes Politiques de Paris* IEPP) or the *Ecole Nationale d'Administration* to construct planning, forecasting and macroeconomic models.

The ELSP was created in 1872 and placed itself in the Saint-Simonian tradition. It advocated for a government based on objective skills (Leblond and Leblond 2013) and the constitution of an administrative elite that was no longer selected on the basis of birth, but on its intellectual qualities, merit and technical skills. The aim was to distance the statesman from the type of lawyer and journalist and to bring him closer to the scholar and businessman (Boutmy 1871). The entire ELSP project carried the ideal of a political life without ideological conflict. The *École Nationale d'Administration* was initially a means of weakening the ELSP (Prost 2017, p. 65). After the war, however, the ELSP became the institute of political studies and the main preparation for entry to the ENA.

The creation of the ENA has the same doctrinal origin. It is the consequence of the trial of liberalism and the search for a third way (Kolopp 2013, p. 56), of a directed capitalism. It is a question of giving senior civil servants a good economic culture. The pre-war elites were said to have been too liberal. The defeat of 1939 was also said to have been the consequence of the lack of economic direction of the State. The ENA must train in interventionist and its tools. It must become a school of application, specializing in the application of the tools of modeling and planning. This project is justified by the defeat of France in 1939 which would also have been the defeat of a certain ideology and by the reconstruction of the country. Law is no longer enough. The senior administration must also know economics (Prost 2017, p. 66). Teaching at the ENA has logically never been liberal. From its origins, it has transmitted faith in modern economics and modernization. From 1946 to 1965, economics teaching was provided by the senior civil service who planned the reconstruction (Simon Nora [ENA], Maurice Lauré [X-36], François Bloch Lainé [general inspection of finances], Claude Gruson [ENA], Pierre Uri, Louis Armand (X-Mines), etc.) and by professors from the law faculties who knew and adhered to the Keynesian doctrine (Jean Marchal) (Kolopp 2013, p. 58).

The ENA, like the IEP in Paris and the French Office of Economic Conjunction (OFCE), are thus “poles of diffusion of macroeconomics and Keynesianism” (Gaïti 2002, p. 17). They create the figure of the modernizing technocrat (Gaïti 2002, p. 2). These training schools generalize the technocratic attitude in senior civil service. Civil servants trained in economics and working in the finance ministries of many developed countries in the world think the same thing. They think that public policy choices must be depoliticized (Christensen and Mandelkern 2022, p.234).

They think that monetary policy and fiscal policy choices (*policy mix*) are not political choices, but technical choices, that. Jean Tirole, for example, defends.

4 Technocracy and Scientific Policies

Technocracy is not just a government by science. Technocracy is also a government of science. Government by construction has invested in the production of tools of government. It has mobilized human and financial resources to produce this technoscience. By construction, technocracy is not scientifically neutral. It directs science in a direction. It participates in the history of science.

Technocracy, unlike autocracy, does not dictate to scientists their results. It influences them. Science under Stalin was communist (bourgeois genetics *versus* Marxist genetics). It was national socialist under Hitler or Aryan. In autocracy, Lysenko's communist biology is a product of Stalinist ideology. Stalin had the ambition to dictate his results to scientists. Technocracy has only one power of influence. This influence is essentially through the choice of scientific policies. It chooses to finance one research program and not another. It provides scientists with a budget or not. By this choice, it gives one direction rather than another to science (Salomon 1970, p. 133). The other effect of technocracy is to modify the definition of science. Science can only be scientific. Scientism and state power make common cause through planning and foresight (Rouban 1988, p. 327). A scientific policy guides the content of research. It also says what is scientific and what should be described as non-scientific (Rouban 1988, p. 327). It is the massive investment of taxes in the production of figures that reduces objective knowledge to statistics. An objective fact is nothing other than a statistically significant fact. This proposition is epistemologically non-neutral. Scientific policies are therefore non-neutral for two reasons. They are non-neutral because they settle the debates that exist in the philosophy of science (epistemology) in favor of a scientific position. They are also non-neutral because they influence certain schools of thought and certain disciplines to the detriment of others through their budgetary choices (Butos and MacQuade 2006, 2012). They have direction effects and discovery effects.

4.1 Direction Effects

The choices made in the context of scientific policies weigh on the production of scientific data by directing research in certain areas rather than others. The history of science is then determined by the needs of the government. Because the themes

and disciplines most supported by the State are those that they consider the most useful.

Historically, the State is interested in science and technology because science can strengthen its military power (Salomon 1970, p. 109). The State finances innovations in the art of war. It also finances national accounting and precision models to better construct its budget. Economic science is put at the service of the State. An economic science that does not serve the demand of the State is not useful. It is not financed. It is also not rewarded by the government. The economist who develops a radical critique of the government thus renounces all symbolic remuneration. He should not expect to be appointed to expert committees, missions and/or be paid to produce reports to the government (Jobert 1999 Introduction Part II). Scientific policy and links to the State make the economist a State rentier⁹ (Brennan and Tollison 1980; Hillman and Long 2017). There would be less money for economics and fewer economists in a polycentric order where competition between knowledge and representations would be guaranteed. The income of economists increases with the interest that the State has in their discipline. Economists have an interest in convincing the public administration that their knowledge is useful to the State. Scientism becomes the official position of economists because it serves the interest of all economists who seek to live off taxes by selling their service. The scientist creates opportunities for gains that a purely speculative and non-utilitarian conception of science does not offer. Economists who live for economics are gradually ousted from the market. They make way for economists who live from economics. Economists who live from economics are, out of interest, the first defenders of the technocratic ideal (planning, scientific and anti-liberal). In a knowledge regime where tax is the main source of financing for the production of economic sciences, it is logical under these conditions to note that economists are rather interventionist and hostile to the market economy. Such a regime of financing of economic sciences favors the production of statistics and macroeconomic models and neglects price theory and the study of the virtues of decentralized orders. A simple supply curve allows us to visualize this direction effect (Figure 1). On the abscissa, we place the quantity of economic sciences and on the ordinate its production price. Financing economic sciences through taxes amounts to subsidizing production. This causes a shift to the right of supply $Q_m Q_{sub}$.

When the State finances Keynesian models of national accounting, it increases its skills in macroeconomics, but deprives itself of the progress that knowledge could

⁹ Very early on, the State perceived the interest in financing science. When the Treasury of King Louis XIV financed the Academy of Sciences, he asked through his minister, Louvois, for compensation. Scientists must produce useful science, in the service of the king and the State (Bertrand 1869, p. 157).

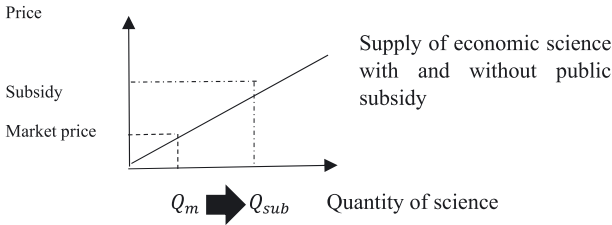


Figure 1: The effect of government subsidies on the quantity of economics.

have obtained on polyarchic systems. It installs a Keynesian vision of economic sciences in the administrative elite and public opinion (Desrosières 2008). It confirms and reinforces *“the evolution of economic sciences towards the institutions of the scientific field closest to economic and political power. Which corresponds to the technical function that macroeconomic research has fulfilled since the establishment of national accounting and planning”* (Pollak 1976, p. 121).

In a technocratic model, the history of science, the history of economics is therefore inseparable from the history of planning of social sciences (Drouard 1982; Pollak 1976). Scientific policy determines the orientation of knowledge. The singularity of economists is the consequence of the scientific policy of French governments since 1934.

4.2 Discovery Effects

The direction effect creates the conditions for a discovery effect. It creates a path of dependency. Discovering A allows for discovery, A_1 then A_2 , A_3 , etc. Discovering B would have taken science in another direction. It would have led to discovery B_1 , B_2 , etc. Research in molecular biology, plasma physics or nuclear fusion improves knowledge in these fields. It allows for the identification of new problems. These new problems justify new budgets.

Science policy funds A and deprives itself of the discovery chain that would have been possible with choice B. What is discovered under these science policies is not what would have been discovered under *laissez-faire*. No one can say what the researchers would have found, because the researchers themselves do not know (Salomon 1970, p. 153). This discovery effect creates path dependency.

A research program, like a technology, becomes dominant because of a process of self-reinforcement. The greater the number of scientists who research in a field, the more they share common problems and knowledge, the more-costly it is for those who do not work in this field to ignore them. The consequence is, for no major

scientific reason, the installation of a dominant economic method and rhetoric (McCloskey 1985). This method ousts from the debates all those who do not share this rhetoric. They are no longer read, no longer listened to, and no longer the subject of controversy. They are marginalized. The risk of such dependence is a scientific locking.

The domination of one school of thought or one method blocks the development of other methods, other ways of thinking. This creates a loss of diversity, a loss that leads to a lower degree of resilience of systems, because instead of exploring all possible avenues, science and economics in particular have looked at reality from a single angle. This has increased knowledge of this reality, but has deprived society of knowledge relating to all other points of view. Modern science produced within the framework of these scientific policies is therefore a science entirely imbued with political decisions (Bachelard 1965, p. 9; Salomon 1970, p. 141).

5 Conclusions

The state nature of the French knowledge regime therefore explains the singularity of French economists and a part of the singularity of its institutional history.

This *French statism* privileges the economics of numbers over all other forms of knowledge. It stigmatizes all non-mathematical and non-statistical forms of knowledge by placing them at the level of proto-sciences. It thus considerably increases the cost of justification (Facchini 2016) of all those who defend one form or another of methodological dualism, in other words, who do not believe that the human sciences can adopt the same method as the natural sciences. It also increases the costs of justification of all those who want to convince the scientific community and then the political elites without using statistics or mathematical models. The latter are constrained by an apparent consensus between economists that in fact serves the defenders of the technocratic ideal and all those who produce the techniques that the government needs to govern by numbers.

However, such a type of government has many weaknesses. Weaknesses that are due to the poor quality of the numbers, their bias (not everything is measured and measurable), the poor quality of the processing of these numbers and all the biases that were mentioned in the introduction (plagiarism, lack of replication, invention of statistics, etc.). *French statism* closes science to debate. It locks science into a neo-positivist epistemology and a dirigiste posture that is questionable and contested by all the epistemological works that show the limits of social physics, but also and above all the failures of public regulations. The failures of public regulations are one expression of the failures of this economic science that believes it can manipulate economic reality through the knowledge of significant statistical facts that are

most often very dependent on the period observed, the processing technique used, the sample of countries or companies chosen and obviously the quality of the theory underlying the test.

French statism finally takes the risk of the cognitive status quo, because as it blocks competition by monopolizing the production of true science, it only produces information that defends its planning ideal. The anti-market and pro-public regulation attitude of French economists is an expression of this. Scientific policy produces an artificial consensus around the idea that the State can do better than polycentric orders, decentralized by prices. It then mechanically increases the costs of justifying the defense of decentralized orders and lowers the costs of justifying centralized orders and interventionist policies. The proponents of these policies can use the argument of authority. Experts and technicians know full well that to reduce unemployment, aggregate demand must be supported by public spending financed by deficits. Since technocracy has given economists power over the treatment of technical issues and left societal issues to voters, there is no longer any way to challenge its choices. Technocracy is self-reinforcing because it produces the knowledge that allows it to justify itself. The economic science that it produces lowers its justification costs. The consequence is the status quo. Because the information that circulates in debates on economic policy issues is biased. It is favorable to interventionist solutions, to functional public finance, to permanent deficit. The costs of justifying an alternative policy remain prohibitive despite the financial difficulties because the tax has been almost entirely invested in the development of Keynesian models. The scientific locking is transformed with an institutional locking. The political and financial crisis that France is going through can therefore find in the weaknesses of governments through science and of science part of its explanation.

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