

Conflicts in the calculation and use of the price index: the case of France

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This article presents a socio-economic analysis of the evolution of construction of inflation in France. Analysis of the various open or more muted controversies that underlie the history of the index throughout the twentieth century and into the first decades of the twenty-first century shows that the various challenges to the index have always been and continue to be linked, albeit to varying extents, to issues around economic distribution and representations of wealth. However, the actors engaged in these controversies and the principles around which they are organised have changed: politics, which brought into play the various social relations between government, statistical agencies and trade unions, has gradually given way to more scientific considerations, which has meant that the more recent controversies have been more technical in nature. And by giving experts a greater role to play, these controversies have also tended to play out at an even greater distance from the traditional actors.

It is also shown that these controversies are embedded in a real world which, because of its increasing complexity and singularity and its (justifiable) concern with quality, is not fully captured by the available tools, despite their sophistication.

Key words: Economic aggregates, Conventions, Prices indices, Distribution, Representation of wealth, Official statistics

Introduction

Since the 1950s, the index of the general evolution of prices (the Consumer Prices Index or CPI) has been one of the macroeconomic indicators most closely watched by national governments. They use it as the macroeconomic indicator of ‘inflationary pressures’. The CPI has also become a highly influential factor in wage negotiations (Hartwig, 2006, p. 539) and is used in wage indexation (minimum welfare payments, minimum wage, pensions, etc.). The focus of intense attention in the highly inflationary 1970s, this index was used to ‘discipline’ national governments in the 1980s—and even more so once the Maastricht criteria came into effect in 1992 and while nations were ‘qualifying’ for the European monetary zone. This article attempts to explore the

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internal conventions, and the sometimes muted disputes, around the calculation and use of this particular price aggregate in (French) official statistics.¹

The prices index is in this way much like certain hegemonic indicators which, despite their recent arrival on the scene, seem to carry the seal of universality. The CPI was first developed in the early days of national accounts and official statistics in the 1910s but did not become finally established as an important indicator until the first great inflationary periods of the 1950s and then the 1970s, when ‘the market type of symbolic money established itself and seemed to have conquered economics (even its most liberal schools)’ (...) ‘The units of account of national monetary systems were henceforth recognised as purely conventional and the only way in which efforts were made to stabilise the value of money was by reference to a statistical index of the general level of prices’ (Théret, 2010, p. 140). Although, with the exception of a small handful, they have been little studied by economists themselves, who often accept ‘data’ as meaning ‘givens’, the ‘struggles’ (Touchelay, 2014) and controversies around the measurement of inflation have been no less real and have often raised what a number of authors have described as ‘daunting’ questions (Toutain, 1996; Vanoli, 2002; Coyle, 2014).

This article offers a socio-economic analysis of the changes that have occurred over time in the way inflation is constructed in France. Analysis of the various controversies, both public and more muted, that have dogged the index throughout its history makes clear that the challenges have always had to do, albeit to different degrees, with the *distribution* (effect of the CPI on the purchasing power of wage-earners) and *representation*² of wealth. However, the actors engaged in these controversies and the principles around which they are organised have changed: politics, which brought into play, and sometimes into head-on collision with each other, government, statistical agencies and trade unions, has gradually given way to more scientific considerations, which has meant that the more recent controversies have been more technical in nature. And by giving experts a greater role to play, these controversies have also tended to play out at an even greater distance from the traditional actors (Section 1). They are exposed to view in dramatic media coverage or in less public academic debates, as we shall see below. These controversies are also embedded in a real world whose increasing complexity, differentiation and, more broadly, variety of qualities cannot be adequately captured by the available tools, no matter how sophisticated they have become (Section 2).³

¹ This article is concerned solely with a socio-economic analysis of the consumer prices index. This index, previously known as the ‘retail price index’, should not be confused with wholesale or producer price indices, which are also extremely important in macroeconomic analyses. However, the principles underlying data collection are very different: wholesale prices and producer prices are collected directly from firms and are facing specific measurement difficulties because, in oligopolistic sectors in particular, price data is particularly sensitive strategically. Consumer prices are collected directly at ‘points of sale’, while data on fixed-price goods and services not directly available at a point of sale are collected by appropriate methods, and more and more rely on standard profile of consumers.

² The term ‘wealth’ chosen here may give rise to confusion. In what follows, it does not have the meaning that it has in accountancy, with ‘wealth’ in the sense of stocks or accumulated assets on one side and ‘outputs’ in the sense of flows on the other. ‘Wealth’ is used here in the more generic sense that pertains in many social spheres. In general terms, people ‘are wealthy’ as a result of their economic income, but also because they live in a socially and environmentally healthy location or because of the quality of the relationships they maintain with others. These questions have been explored, for example, by Méda (1999), Gadrey and Jany-Catrice (2006) and the Stiglitz *et al.* (2009).

³ This article is based on an exploration of various statistical manuals (ILO, Eurostat, OECD and BLS) and examination of academic papers, press articles, reports or trade-union documents produced over the period 1950–2016. The idea was in this way to build up a corpus of statements drawn from a number of different social worlds. The article also draws on a number of semi-structured interviews. Twenty-seven

1. How to analyse the ‘prices index’

The ‘prices’ aggregate is a major conceptual tool of contemporary market-based societies. It is a ‘statistical fiction’ that has gradually been consolidated by institutions, social usage and mechanisms into a rock-solid, taken-for-granted device, viewed as a ‘constraint’ or a ‘resource’ by those who make use of it. The CPI will be studied in its twin aspects as a tool of proof and a tool of government (Desrosières, 2008). The socio-economic perspective draws on the tools of the social sciences specific to the field of science studies, with the aim of opening up the ‘black boxes’ of measurement and its associated concepts (MacKenzie, 2005). It combines a sociology of quantification and a social history of statistics and draws on the work of Ted Porter (1995) or Alain Desrosières (2008). It is combined with political economy, along the lines of the remarkable work of Thomas Stapleford (2009). We have chosen to analyse the major debates and the actors involved in them by locating these controversies and ‘crises’ in their historical and social context. With the exception of the work of historian Béatrice Touchelay (2014, 2015), few studies have adopted this perspective in order to examine the magnitudes that specifically characterise *the monetary economics of production and to highlight in particular the conflicts over distribution (Touchelay, 2014, 2015) and over the representation of wealth embodied within them.* Thus, the article will be centred on the construction of the prices aggregate (prior to which various theories and techniques had already been adopted), the historical, social and institutional conditions in which it was developed, the use made of it in the models developed by economists and politicians and, ideally, what that has done in return to the ‘reality’ thus modelled.

1.1 First period: creating an indicator as a proxy for manufacturing activity?

The adoption of an historical perspective is of heuristic value here in that it lays bare the origins of the dynamics—now complementary, now conflicting—that are still at work today in the tension between representation and distribution. Can we speak of an historical controversy? We are not in a position to offer an unequivocal answer. It has to be stated, nevertheless, that the (few) authors who have studied inflation in terms of the origins of the way in which it is measured do not seem to attribute the same importance to these two organising principles.

On the one hand, the INSEE statistician Jean Rouchet (2016) sees the US financial crisis of 1907 as the starting point for the development and use in official statistics of an aggregate price index. In this view, this crisis was the trigger for the construction of a *proxy* for economic activity, that proxy being the measurement of prices. The 1907 financial crisis gave rise in his view to a crisis in the real economy, leading to a sharp drop in output and imports. This crisis, which originated in the USA, was said by Alfred Sauvy to have ‘troubled the French government’ (Rouchet, 2016, p. 5) and led to the prices observatory directed by Duge de Bernonville. However, the first prices indices were, according to Rouchet, conceived as indirect measures of the representation of economic activity (for convenience’s sake, it was easier to record changes in prices than in volumes). Thus, the first empirical estimates of prices carried out

interviews were conducted between January 2016 and May 2017, with statisticians (or former statisticians) at INSEE who had worked in INSEE’s prices division or in national accounts, as well as with some economists and trade unionists. This qualitative survey has been a decisive indirect input of this paper. I warmly thank the economists and statisticians for their generosity.

by official statisticians are said to date from before the periods of inflationary crises (Rouchet, 2016, p. 5).

This history is not accepted unanimously. The historian Touchelay has shown that the prices index actually emerged at the same time as the ‘first upsurge in inflation’ at the beginning of the twentieth century. It was intended, she says, ‘to soothe the anger of housewives who had protested against the cost of living three years earlier’. Similarly, in highlighting the establishment, from 1919 onwards, of joint departmental cost of living commissions answerable to a ‘Central commission for research on the cost of living (decree of 1920)’ (Chélini, 1998, p. 24), the historian Michel-Pierre Chélini emphasises the importance of the ‘cost of living’ perspective for governments and households.

In any event, according to Rouchet, it was only after WWI, when prices quadrupled, that quantifying inflation was really contemplated. Inflation became a public concern, and at that point in France the first indices were created for wholesale prices, then retail prices and then producer prices. It was the Laspeyres fixed-base index that was adopted in France as well as in the USA, and there were two reasons for this at the time. One was practical, as it is the less complicated and cheaper method to depict the evolution of prices, since in the Laspeyres index the quantities used are those identified in a base year (1).

$$L(p)_{1/0} = \frac{\sum p_1 q_0}{\sum p_0 q_0} = \sum w_0 \cdot I(p)_{1/0} \quad (1)$$

The other was theoretical, as Lucien March sees it: ‘A prices index, which is to say a costing of a uniform life style (...) is understood not in its ordinary sense but in a sense that will measure precisely the effect of changes in the prices of things, independently of changes in habits or tastes, or of an increase in or differentiation of needs’ (cited by Rouchet, op. cit.).

Various modes of data collection succeeded this generic definition over time, marking out the path towards a prices index that was aiming for a form of exhaustiveness. As Table 1 below suggests, the objective, over decades of ‘progress’ in statistics, was to cover all households and all goods and services. Between 1914 and 1949, the French National Statistical Office adopted a basket of 34 articles; its successor body, INSEE, regarded a ‘working-class family of 4 people living in Paris’ as representative of what might be considered a ‘typical family budget’. By 2016, all consumers (in towns with more than 2,000 inhabitants) and 97% of consumption were covered⁴ by the consumer prices index.

1.2 Open controversies during the 1970s mark the public debate

1.2.1 Initial tensions: between governmental struggles and attacks by economists.

The initial tensions around the French index date from the 1950s, when governments applied

⁴ The question of how to take rents into account in the prices index is still a matter for discussion, particularly at the European level. In France, the consumer price index is directly linked to household consumption and not to investment. Thus, only the rents on dwellings paid by tenants are included; neither the cost of acquiring the dwellings nor the cost of the capital raised (i.e. the interest charged on mortgages) is taken into account in the CPI. This convention is different from the way rents are treated in the national accounts; here, the convention adopted for owner-occupiers is that of the imputed rent. However, owner-occupiers account for 53% of all households in France (source: *Bulletin de la Banque de France*, ‘La prise en compte des services de logement dans l’indice des prix à la consommation: une comparaison internationale’, no. 115, July 2003). This convention has a significant impact on the weight of the ‘housing’ component of the budgetary coefficients used to compile the CPI.

Table 1. The 8 'generations' of the French PCI: 1914–2016

	Year of change/ application	Entitled	Reference population	Geographical coverage	Basket of goods and services	Weightings	Changes
1 st generation	1914 1914–1949	34-item index Base year 1914 then 1938	Working-class family with 4 persons (2 children)	Paris	29 food items 4 heating/lighting items 1 cleaning/maintenance product	Standard budgets	
2 nd generation	1949 1950–1956	213-item index	Blue-collar/ white-collar family with 4 persons	<i>Département de la Seine</i>	Food (excl. fresh products and alcohol) Manufactured goods (excl. consumer durables, petrol, medicines)	Family budget survey	
3 rd generation	1957 1957–1962	250-item index	Blue-collar/ white-collar families with more 2 persons	<i>Département de la Seine</i> + 17 regional capitals	Some services Food (excl. alcohol) Manufactured goods except for some consumer durables	Family budget survey	Working-class households and families (Saglio, 1993, p. 5)
4 th generation	1962 1963–1970	259-item index	Blue-collar/ white-collar families with more than 2 persons	All towns with more than 2,000 inhabitants	50% of services Food (excl. alcohol) Manufactured goods except for some consumer durables	Family budget survey	
5 th generation	1970 then 1980 1971–1992	296-product groups index	Household whose head is a manual or white-collar worker	All towns with more than 2,000 inhabitants	60% of services All food products Manufactured goods 'about' 80% of services	Updated annually on the basis of the national accounts	

Table 1. *Continued*

Year of change/ application	Entitled	Reference population	Geographical coverage	Basket of goods and services	Weightings	Changes
6 th generation	1990–1993 265-product groups index Introduction of a new 'tobacco-free' index (for indexation of the national minimum wage in particular)	All households	All towns with more than 2,000 inhabitants	All food products Manufactured goods 'About' 85% of services (vets, undertakers, car hire, sea and coastal transport, air ambulances, air transport (standard flight) Rate of coverage of CPI: 88.3%	Updated annually on the basis of the national accounts	'Renewal of the IT infrastructure' Maastricht indices and European harmonisation taken into account.
7 th generation	1998 An index for the first income quintile group was introduced in 2013 as a basis for index-linking the national minimum wage.		Thus the field of the CPI became actual household final consumption expenditure for operations comprising monetary transactions	Coverage of CPI: 94.1%. Additions: insurance (car and house), social protection services, domestic services (household waste disposal, caretaking, maintenance of lifts, domestic employees). Use of the Classification of Individual Consumption by Purpose (COICP) Coverage of 97% of goods and services. Eurostat COICOP classification adopted at a more detailed level than in 1998.	Coordinated with the introduction of the new 1995 base year for the national accounts, the CPI base 1998 adopted the new concepts used in the national accounts.	
8 th generation	2015–2016 Index based on 1100 product families, known as 'varieties'.		99 towns with more than 2,000 inhabitants			

Source: Based on [Saglio \(1993, p. 4\)](#) for the first six generations, and on various INSEE methodological memoranda for the seventh and eighth generations.

direct pressure on the prices of products and ‘on public prices used in the composition of the index’ (Touchelay, 2014, p. 119). According to the historian, issues of distribution were at the centre of political debates (‘to keep it from increasing and triggering a series of wage increases’; *op. cit.*, p. 119). Moreover, wage indexation was first introduced in 1952, when legislation indexing the minimum wage to price increases was adopted. These early indexation initiatives almost inevitably brought the parties involved into conflict over the cost of living and gradually shifted inflation slightly outside the mechanisms of economic policy.

Meanwhile, in the USA, the sharp growth in inflation seen in the 1950s, as well as the indexation policies resulting from it, was handled differently. Stapleford explains how two economists, Richard Ruggles of Yale University and Albert Rees of the University of Chicago, serving on a Joint Economic Committee in Washington, DC, in 1958, proposed arguments that broke with those traditionally put forth, emphasizing instead the role of unions in the growth of inflation and of industrial monopolies. ‘The widely lamented inflation was in fact fictitious’, said Stapleford, summarising the report, ‘a problem of faulty statistics. In truth, the American economy was growing far more rapidly than standard assessments indicated’ (Stapleford, *op. cit.*, p. 308). According to Ruggles and Rees, official statistics were unable ‘to capture a central form of growth in the post-war economy: innovation as reflected in product quality and novel commodities’ (Ruggles and Rees, 1959). These were the opening rounds in a questioning of measurement and the difficulty of capturing quality effects. They were also the initial recommendations of economists seeking to improve the methods of measurement used in compiling price indices so as better to reflect changes in quality and productivity as well as the introduction of new products (Ruggles and Rees, *op. cit.*).

Wage indexation,⁵ on the one hand, and pressure from mainstream economists, on the other, led gradually to pressure from all quarters (experts and unions) to turn the prices index into a ‘cost of living index’. However, ideas on what the index should contain differed widely. For the unions, in France as in the USA, what was needed was a consumer spending index, while the experts preferred a constant utility index. Stapleford shows that the NBER recruited George Stigler of the University of Chicago at that time, and that it was at his suggestion that US official statistics began to adopt ‘a standard constant utility analysis of cost of living indexes’, a highly standardised and unambiguous notion of ‘the cost of living at constant quality’. Starting in 1959, the economist recommended that the CPI become an index of constant utility or an index of well-being and that such an index would have recorded lower price increases from the Second World War onwards, ‘due to substitution effects, quality change, and a more appropriate handling of new products’ (Stapleford, 2009, p. 313). Most of these recommendations were brought back on to the agenda 20 years later by the well-publicised **Boskin Commission (1996)** (see below). Academic studies were carried out regularly at the time; they have almost always come to the conclusion that inflation had been ‘overestimated’ (relative to a cost of living index).

⁵ This indexation would last in France until the beginning of the 1980s. ‘In order to shatter inflationary expectations, a new way of setting wages was put in place consisting of indexing wages to previously announced inflation norm, on which wage increases would thenceforth be based. In other words, the point was to substitute ‘pre-indexing’ to a moderate inflation target for ‘post-indexing’ to past inflation. This new indexation carried with it a ‘catch-up clause’ if the indexation norm diverged from the actual inflation rate observed ex-post’ (Bezbakh, 2011, p. 95).

1.2.2 The first open disputes in France: unions on the front line. Open disputes around the index started to bubble up in the 1970s. They reflected social compromises that were emerging at the time, and this first major crisis of confidence was certainly not unconnected with what would emerge as the initial phase of financial globalisation, when the USA, and soon the Western world, left the gold standard in 1971. ‘In 1973’, wrote Bruno Théret (2010), ‘the capitalist world became a world of self-referential but competing fiscal currencies, subject to recurring speculation on the international financial markets’. As far as the index was concerned, it was the unions that launched the first challenges. The CGT first called into question the *composition* of the basket of goods. (The unions wondered whether or not taxes, for example, should be included, and refused to take account of any ‘quality’ effect.) Thus, Piriou shows that from 1972 onwards, the unions were putting forward counter-proposals; they regularly came up with their own index, which was to play an important ‘social role’ until the early 1980s (Piriou, 1992, p. 82). Not until 1998 would the CGT stop publishing its index, due to the decline in inflation and because mass unemployment became *the* major issue.

At the beginning of the 1990s, a new controversy broke out at INSEE following the French government’s proposal to compile an index with and without tobacco. The index ‘with tobacco’ was ultimately adopted for international comparisons and for the purpose of European convergence; the index ‘without tobacco’ was adopted for indexation purposes (Saglio, 1993, p. 5). This decision, enshrined in the Neiertz Act, exemplifies the various disputes that keep stoking the debate. On the one hand, eliminating tobacco from the index obviously made it possible to raise taxes on this mass consumption item without an effect on the price—and neither, therefore, on wages. This was also a way to sort out prices of varying ‘purity’ or legitimacy for inclusion in the basket: on the one hand, the price of tobacco, government-mandated and therefore not a legitimate part of the basket, and on the other, the ‘other’ prices, regarded as ‘true’ market prices. And it was also a way to ratify the introduction of morality into government actions.

The rise in unemployment in France from the 1970s onwards, which was to become *the* new public issue, a certain loss of momentum on the part of the unions and the appointment, accepted as authoritative, of French economist Edmond Malinvaud to head INSEE in 1974, all took the heat out of the controversies for a while.

1.2.3 The influence of the indexation of wages, social security benefits and financial products on sensitivity towards the index. The role played by the indexation of wages and social security benefits (as well as tax brackets) in raising political sensitivity towards the prices index shifted some of the struggles and controversies into the field of statistics. This feverishness was later further heightened by an innovation introduced by the financialised State, which at the end of the 1990s introduced the indexation of financial products. Using the prices index to index certain financial products revealed how the state ‘is once again starting to exist in a state of dependency on capital (...) and is summoning up and putting in place a form of financial capital that is going to live off the state, notably by feeding on its public debt’ (Théret, 2010, p. 141). The indexation of financial products since the 1990s has been one more mechanism put in place ‘to reassure lenders’ (Tinel, 2016, p. 50). Since 1997, TIPS (Treasury Inflated Protected Securities) have been in place in order ‘to provide a constant inflation-adjusted return

to investors' (Greenlees and McClelland, 2008, p. 4). One year after the USA, the French Treasury issued around 10% of its debt in the form of bonds indexed to the prices index (OATi and OATie). These instruments, sometimes known as DSK bonds (Lemoine, 2016, p. 145), were introduced by Dominique Strauss-Kahn, the French minister of finance at the time, and indexed the interest rate to the inflation rate. The state reduces its interest payments by offering lower interest rates, which it justifies by the lower risk incurred by creditors.

Following the 2008 Moati and Rochefort report, which suggested, as already noted, that several indices could coexist alongside each other, it was the bankers who this time came to the rescue of INSEE. Commenting on the report, the banker Delpla emphasised the decisive role played by DSK bonds in consolidating financialisation. He estimated that 150 billion euros of public debt was indexed to the CPI and concluded that 'If the current attacks were to continue and call into question the integrity of the CPI, if investors started to believe that the CPI seriously underestimates France's inflation rate, then there is a serious risk that they will sell their bonds or demand that the debt be indexed to an index showing a much higher rate of inflation. This would be a terrible blow to the public finances, to France's financial credibility and to the strategy of indexing debt to prices. The debate on the CPI has not hitherto been regarded as serious by investors. However, if they do start to take it seriously, how could the Treasury and CADES⁶ continue to finance their bonds?' He finished by declaring that 'This is why the government, and in particular the minister of finance, should act quickly to call a halt to these attacks on the French CPI and not introduce a number of different general prices indices. Otherwise there is a risk that ten years of Treasury credibility in the bond markets will be undermined' (Delpla, 2008, p. 166). Was there a risk that what was happening in financialised capitalism could end up by making official statistics one of its main brokers?

1.3 The 'post-Boskin' years

The 1996 Boskin Report on measuring inflation received considerable media attention both in the USA and internationally. This report was not the first of its kind: Ruggles and Rees had as early as 1959 made the main arguments in favour of a possible 'overestimation' of inflation. This time, however, the extensive media coverage of the Boskin Report was directly related to *quantification* of the differences between calculation of the prices index using the then-current method and calculation by the method advocated by economists with a view to making it more of a 'cost of living index'. It was this quantification that received extensive attention in the media and in people's minds, since Boskin put the overestimation of inflation at 1.1% per year in 1996 and 1.3% per year for the 10 previous years.

The major sources of bias identified by the Boskin Commission related to the handling of substitutions in the purchase of goods, the increasingly frequent introduction of new goods into market baskets and the idea of better reflecting the quality of what is consumed. Thomas Stapleford argued that the aim of the theoretical and political project that had been underway since the 1950s had *de facto* been to provide scientific evidence for the notion that inflation had been overestimated. This was in any case the conclusion reached by the Boskin Report (as Ruggles and Rees had in 1959), namely

⁶ The fund set up in 1996 to amortise France's social security debt.

that calculation of the prices index should be reformed in order to reduce the overestimates. The political and economic context was favourable to such reforms. In addition to the end of the Cold War, the structural deficit in the US balance of payments and the increasingly strong challenges to the dollar as the reference currency (Théret, 2010, p. 149) were all factors tending to flush out possible sources of deficit reduction. According to Stapleford, the US government, by allying with these mainstream economists arguing for reform of the index, found a genuine lever to pull. Twenty years later, the arguments advanced by the different parties in France sound very similar. Reacting to Moati and Rochefort's report (2008), in which they advanced the hypothesis that the prices index may be *weaker* than it should be, Delpla, the BNP-Paribas economist quoted above, put the question point-blank: 'Does the government really want the ECB to factor into its monetary policy price indexes that show an inflation rate significantly greater than that of the current CPI?' (Delpla, 2008, p. 165). He added (p. 166): 'Such indices showing higher inflation would call for a re-evaluation of minimum welfare payments and social security benefits'. And he concluded: 'If INSEE published several price indexes showing higher rates of inflation, the demands for re-assessing minimum welfare payments and social security benefits would aggravate government deficits even more'.

Worldwide, the challenge no longer comes from the unions but is embodied in alternative proposals. The papers written by John Williams, who maintains a website called 'ShadowStats', have provoked a great deal of comment in the USA (Fioramonti, 2014), if only because of the striking graphics he provides suggesting a net reduction in inflationary trends since the first CPI reforms in the USA as compared to the trend that would have occurred without those reforms. These reforms are sometimes considered to be deflationary or devaluatory measures. As to alternative versions, they have received such extensive coverage in the US media that the statisticians of the Bureau of Labor Statistics, even including the director of the price division, have mounted a counter-attack. In a long article in the *Monthly Labor Review*, Greenlees and McClelland (2008) roundly criticise the idea that inflation may be underestimated by the various reforms introduced in the USA since the CPI was first designed. They go so far as to term some of these alternative estimates and the criticisms 'repeated by numerous bloggers and commentators' who go along with them as 'urban legends' (Greenlees and McClelland, 2008, p. 6). They hope thereby to put out the fire of controversy or at the very least discredit their dire enemies. The defence mounted by the BLS statisticians takes several forms. Arguments are advanced as to the broad 'scientific consensus' around theories of the cost of living and constant utility, as to 'consistency' with 'international standards' and 'statistical handbooks' and as to the strength and rigour of econometric hedonic pricing methods.

In France, paradoxically, the controversy was imported following the 1996 Boskin Commission by progressive researchers whose main interest lay in what the indicators had to say about a new representation of wealth (Gadrey, 1996). Gadrey tended to place greater emphasis on the Boskin Commission's fairly radical proposals for dealing with this problem of overestimating inflation. In particular, he highlighted the innovative proposals for measuring outputs and outcomes in activities for which the very idea of 'unit of output' has no meaning, particularly in healthcare and education. What had the INSEE statisticians worried was a possible loss of confidence in their index. The statistical institute reacted officially by publishing two articles simultaneously, one by François Lequiller in *Économie et Statistique* and the other by Michel Glaude, then

INSEE's Director of Demographic and Social Statistics, in *La Revue française du marketing*. Glaude was of the frank opinion that 'the American debate seems to have got out of hand', with some of the attacks being born of 'political opportunism' and 'Alan Greenspan's extreme deftness in justifying a monetary policy that is actually satisfied with a yearly rise in retail prices of 2 or 3%' (Glaude, 1997, p. 20). François Lequiller, at the time deputy head of INSEE's department of consumer prices, resources and living conditions and the person responsible for the French consumer prices index and not long returned from a sojourn of several years in the USA at the IMF, wrote an especially detailed response. His article, to which both researchers and unions continue to refer 20 years on, took the view that France is rather protected from such overestimation and that Michael Boskin ought not have put a figure on the 'bias'. Lequiller wrote (1997, p. 16), 'It is hardly reasonable, given the current state of our knowledge, to attempt to quantify this problem'. He even stressed that 'in a case such as this, the response of the statistician must be to acknowledge his ignorance and work to reduce it, not to make dangerous estimates' (op cit., p. 18). Lequiller granted, moreover, that most of the estimate in the Boskin Report derived from the problem of the substitution of goods, but that for a certain number of other aspects (product quality, estimates of service businesses, tension between constant utility and constant basket of goods, etc.), improvements were still imaginable, without indicating with a +/- sign how the index might be affected. Lequiller nonetheless perceived three pathways for improving the index which would constitute three separate subsequent reforms of varying effectiveness (econometric hedonic methods; more thorough use of synergies among European statistical agencies; greater use of data from private market research companies; see Lequiller, 1997, p. 24). This is a topic to which we shall return.

While Lequiller sought in his article to tamp down the controversy and felt that the CPI in France was highly reliable, others reactivated the questions and concluded, like the Boskin Report and Ruggle and Rees before him, that inflation in France was probably overestimated. Such were Clerc and Coudin (2010), who later applied the so-called 'Engel curve' methodology that was beginning to come into use beyond the American continent. Following the work by Da Costa (2001) and Hamilton (2001) on the USA, these statisticians quantified the difference between the current CPI and a cost-of-living index. On the basis of econometric studies conducted using the Engel curve, they concluded that inflation in France had overestimated the cost of living by 3% per year between 1974 and 1981, and by 1% per year from 1981 to 1994. The world of Western official statistics being quite globalised, Beatty and Larsen (2005) obtained congruent results concerning Canada. This research, however, was not aimed so much at the Boskin/Lequiller debate as at the new controversy starting up now that the Maastricht Treaty was requiring convergence within Europe and the currencies of Europe had shifted to the euro.

1.4 The Maastricht Treaty and the increasing power of Eurostat

The 1992 Maastricht Treaty, which established the European Union and led to the establishment of the single currency, laid down the convergence criteria with which member states had to comply before and after integration. Most importantly, the national deficit was to be kept below 3% of GDP while the national debt was to be kept below 60% of GDP. As far as interest rates and inflation are concerned, the treaty stipulates that they should not exceed those in the least inflationary countries.

Thus, from the end of the 1980s onwards, those countries aiming to sign the Treaty started to prepare the ground both for rigorous policies designed to ensure compliance with the European criteria (Boyer, 2015, p. 174) and for greater coordination in the methods of measuring inflation. This coordination actually became a Eurostat-coordinated imperative. Since such coordination was difficult to establish while the member states had different statistical systems, from 1996 onwards Eurostat produced a harmonised CPI (HCPI). This index was fixed by regulation and constructed on the basis of the prices data collected by the member states. By means of a series of regulations and directives, reinforced by a methodological alliance with the United Nations and IMF, it eventually became established as a crucial international institution, with the force of law, in the harmonisation of definitions, classifications,⁷ methods and scope of prices measurement in Eurozone countries. Incidentally, it was the HCPI that was adopted by the ECB as the indicator of price stability. However, the HCPI and the French CPI differ in certain respects, particularly with regard to how they treat redistributive public pricing policy. Thus, the French CPI uses the gross costs of medical and social services, while in the accounting principle adopted by Eurostat it is net prices that are taken into consideration (Magnien and Pougard, 2000).

1.5 Transition to the euro, new prominence for retailers

The arrival of the euro in French households in 2002 had a variety of effects, among which was a fraying of confidence in the currency. As a result, doubt was cast in the minds of citizens about the leading aggregate indices of price changes. Lessened credibility of the official index, not just in France, soon led in 2004 to a revision of the economic survey of households. An 'economic conditions' module, made up of questions standardised across Europe and including a section on 'opinion on the general economic conditions in France' over the past 12 months and the coming 12 months (i.e. on the economy in general, unemployment, inflation, opportunity for purchasing and for saving, etc.), collected people's perceptions about inflation they were experiencing. This survey⁸ revealed a distinct gap throughout Europe between 'perceived' inflation and inflation as objectified in official statistics. A report, commissioned by the ECB, was produced by several economists (Dieden *et al.*, 2006). It shows very clear gaps in all the European countries between perceptions and the official index, including in France. It was estimated that the gap was consistently of the order of 6 points between 2004 and 2010 (Accardo *et al.*, *op cit.*, p. 4).

The controversy found a new ambassador in the person of Michel-Edouard Leclerc, director of the hypermarket chain of the same name, who made himself

⁷ Notably the COICOP classification; see Table 1 above.

⁸ Thus, approximately 2,000 households are questioned by telephone each month (Accardo *et al.*, 2011). This survey was not totally new. Previously, INSEE's monthly household economic conditions survey gathered data on households' opinions on macroeconomic aggregates, particularly inflation. However, the questions were not as precise. They were formulated thus: 'Do you find that prices have increased considerably/moderately/slightly, stagnated or fallen over the past 12 months?', thereby facing them with prospects of change (see *Informations rapides*, 28 February 2007, p. 2). The balance of opinion was then calculated by 'the difference between percentages of positive and negative responses' (p. 1). Previously again, a 'psychological indicator of the cost of living' was produced from 1945 to the beginning of the 1960s. Produced several times per year, it was compiled and circulated by IFOP (Chélini, 1998, p. 138) on the basis of the following question: 'In your opinion, what amount of money is required each month to meet the living costs of a family of four in your locality?' (*op. cit.*, p. 138).

the official defender of household purchasing power and, coincidentally, promoter of his low-price strategy, replacing the unions,⁹ which were already on the decline. In February 2004, the retailer launched an explicit advertising campaign that challenged INSEE's diagnosis of households' purchasing power. The then minister of economic and finance seemed to play a crucial role in fuelling this polemic by issuing regular denunciations of the price rises introduced by the large retailers. Lerclerc's demand was that the price index should reflect the price changes seen in this type of point of sale, which the government granted and required INSEE to carry out—to the great displeasure of many unions and the professionals at INSEE.

The explanatory factors put forward in response to the controversy around the 'correct' measurement of the inflation that all European countries had been experiencing since the introduction of the euro were many and varied. One that was highlighted was the increasing heterogeneity of the populations, a factor that INSEE was beginning to look into. In a long report on 'The measurement of purchasing power and the perception thereof by households' 2007, INSEE (Accardo *et al.*, 2007) INSEE suggested compiling price indices for each socio-occupational category. The results revealed that socio-occupational category had very little influence on the variations in the prices index. One of the reasons for this is certainly linked to the fact that these category-based price indices were unable, given the data-collection methods, to take account of the range effects within a variety of products and were based solely on a distortion of the budgetary coefficients by socio-occupational category. The official statistical institutes responded to this measurement dispute in two complementary ways.

The first was to give greater prominence to the indices based on perceptions of inflation, thereby objectifying the differences between 'actual' and 'perceived' inflation. The director of INSEE at the time acknowledged that these differences had historically been high (Data, 2009, p. 28), which the work of Accardo *et al.* (2008, 2011) had also shown. The second was to launch an innovative tool, namely a personal calculator. Each consumer could, on his or her own, access a simulator that would measure, fairly instantly, his or her index of personal prices. The tool was developed in order to settle the controversy, on the assumption that individuals are hyper-rational and calculating. In 2006 the official site of the German statistical institute (Destatis) came out with a first version of an individual calculator, which each person (consumer) could adjust to suit his or her personal consumption pattern. The initiative was reported by the journal *Sigma, the Bulletin of European Statistics* (Neutze, 2006), and other national statistical agencies in Europe quickly followed, demonstrating how quickly innovative statistical methods and the accompanying expertise are diffused.¹⁰ Thus, in Great Britain in January 2007, two statisticians from the Office for National Statistics published in the *Economic & Labour Market Review* an article by Matthew Powell and Jim O'Donoghue titled 'The Personal Inflation Calculator', in which they describe the launch by the British Office for National Statistics of a site for calculating one's personal inflation.

⁹ The trade unions' position in the field of official statistics is always a difficult one. Their views are expressed collectively against a background of strong loyalty to their institution (Pénissat, 2009, p. 42).

¹⁰ Vincent Gayon (2013) explains the diffusion of information in the case of experts in government ministries: 'Within their national bureaucratic spheres, on the one hand, and their international spheres of operation, on the other, the governmental actors who sit on the respective OECD and EC working committees function on the basis of an equivalent degree of asymmetry between ministries' (p. 48).

In that article, the authors, statisticians from the British Office, show how ‘personal’ inflation can vary depending on an individual’s social and demographic profile (Figure 1).

In France, INSEE undertook the same project in the first quarter of 2007, drawing directly on the German experiment. It put such a simulator online, making it accessible to any internet user. In doing this, the statistical offices were trying to meet several objectives: satisfy the individual consumer, settle the broader controversies, help rebuild the legitimacy of the index and also add legitimacy to the notion that a cost-of-living index would be more appropriate. By being more relevant to the individual, these official statistical agencies thought to preserve the legitimacy of the averaged index. But this new statistical offering also reflected the prevalence of neo-liberal thinking on the part of national governments, which included in their approach to governing an increase in the number of calculation centres and ever more personalised measuring tools (Desrosières, 2008). A price index calculated by each person became a kind of personalised statistical description which, though without legal status, allowed each ‘agent’ to ‘sort themselves out’ by adopting rational, optimal behaviours. These tools promoted a very impoverished concept of official statistics. In so doing, they deprived the official statistical institutes of their role as producers of collective cognitive coordinating tools.

1.6 Control of government spending, cash register data and a new alliance with marketing agencies

The work of restoring confidence in the INSEE price index also led to new innovations and new investments, for the gap between the perceived index and the real index was hardly narrowing. Negotiations between 2010 and 2016 with the major retailers led to the introduction of the ‘cash register data’ monitoring system. This direct access to cash register or ‘scanner’ data from the retail chains, partly processed by marketing agencies, is attributable to INSEE’s need to lower its expenses; collecting 200,000 items of price data at the various points of sale each month is an expensive process at

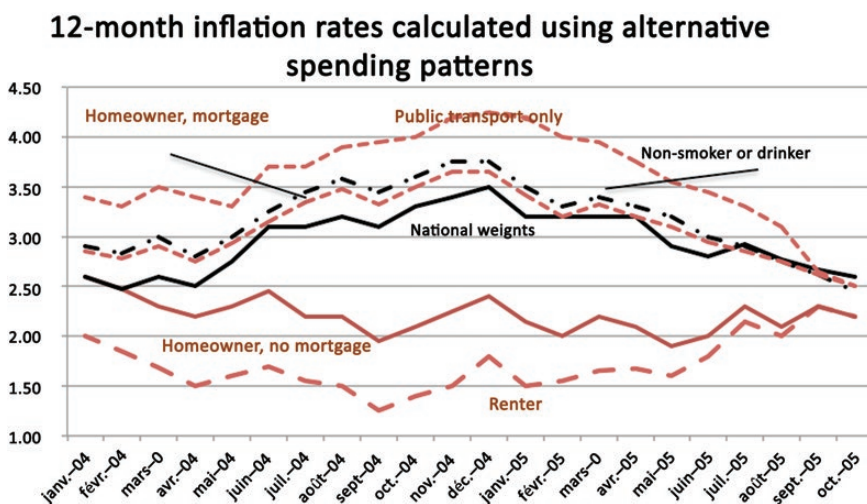


Fig. 1. Evolution of the CPI in the UK by spending patterns
Source: (Powell and O’Donoghue, 2007, p. 31).

a time of reduced government spending. It was also a matter for INSEE of presenting itself symbolically as an innovator by positioning itself within the big data ‘space’ as well as enhancing the reputation and legitimacy of its output by using digital technology to calculate price variations. INSEE also holds out the possibility of using this data to resolve some of the problems of valuing substituted goods, particularly at a very disaggregated level (the level of so-called ‘micro-indices’) or even to solve some of the problems associated with evaluating quality (Silver and Heravi, 1999). The idea of this tool, which is known as ‘scanner’ data in the USA, was introduced in France, concomitantly with the notion of a constant utility index, first by Magnien and Pognard (2000) and then by Sillard (2013). It is consistent with standard theory, thus putting official statistics at the service of economic theory. The purpose of INSEE’s scanner data project is ‘to closely reflect the microeconomic foundations of consumer price indexes by using scanner data to calculate indexes that reflect possible consumer sensitivity to relative product prices. These foundations draw on the concept of a constant utility index’ (Sillard, 2013). It is also possible to see this project as a great reversal, ‘by making the state no longer the measuring and planning force in the economy . . . but the thing being measured by private actors in the economy’ (Gayon and Lemoine, 2014, p. 31).

2. Measuring the index in the contemporary context: an insoluble aggregation of singularities?

Our analysis cannot be restricted to highlighting the redistributive effects of a prices index that is gradually and technically revised downward. Account also has to be taken of the major changes in business practices that have given rise to or at least facilitated such reforms. The aim here is essentially to reintroduce the actors in price statistics (INSEE) into our analysis of the technical problems they face, together with the strategies they have deployed in producing and adapting indicators. These changes include the continuous innovations leading to rapid product renewal, the difficulties of taking into account service activities (Griliches, 1992), durable goods (Gordon, 1990) and certain ‘free’ goods and services (Horn, 2002) and the increase in modes (and points) of sale (e-commerce). They also include, finally, the thorny issue of ‘quality’ and how it is factored into the measurements. These difficulties may also be related to increasingly sophisticated pricing policies, such as *yield management*, a variable pricing strategy based on the principle of individual willingness to pay. It is becoming increasingly favoured, facilitated as it is with computerisation, which is making such policies technically possible, and increasing social acceptance (Finez, 2014). These yield management policies are spreading rapidly in certain fields (e.g. airlines and railways). The difficulties are also linked to speculative pricing policies in food products and energy.¹¹

2.1 Demassification and singularisation of business practices

The reasons for the difficulties are well understood today, even if they have multiplied in recent decades, without the innovations introduced by statisticians having been able to overcome them. Indeed, most macroeconomic aggregates were designed and

¹¹ The volatility of certain prices has led to the creation of an indicator of ‘underlying’ inflation, from which administered prices are also excluded.

applied during the Fordist era, which in terms of output meant observing standard, manufactured units of constant quality. This has led the statistical offices, then as now, to employ particularly detailed criteria consistent with the very notion of ‘standard units of constant quality’. Sometimes, however, the realities that statistics are supposed to represent stand at some remove from the procedural ideal. Reality can even seem to ‘come undone’ (Boltanski and Esquerre, 2016). Taking the place of standardised mass production distributed through well-defined channels are more atypical production practices, using more diffuse and uncertain distribution networks. The special characteristics of service businesses, which represent no less than three-quarters of production, the immediate intangibility of what is produced, a certain confusion that prevails at times between business operations and financial performance, the uncertainties of the exchange process, obstacles to codification and standardisation, not to mention the growth of the digital world and offerings without cost—all are changes posing formidable challenges for a statistical price index.

This inevitably requires ad hoc adjustments, a certain amount of statistical jerry-rigging, and statistical processes that will vary greatly between products and services (calling into question, moreover, the pertinence of relative prices)—all very far from the construction of statistics as first created during the Fordist era. While not all the arguments are reducible to the question of how to deal with output quality in price statistics, this does bring into play a large number of the issues. This will be our focus in the next section.

2.2 ‘Quality’: what’s it all about?

The way quality has been dealt with in statistical measurement can be summarised as follows: initially a progressive idea, it was quickly co-opted by businesspeople and the most conservative economists. Thus, historically, taking quality into account in measuring inflation was demanded by the trade unions in the USA. They argued that inflation at that time was *underestimated*, since the quality of products sold had clearly declined during the war (Stapleford, 2009). B. Touchelay makes the point, too, that in France in the early 1970s, ‘The CGT union also disputed both the reasoning behind changing the index and its ability to reflect change in the cost of living over time’ (2014). The need to account for quality was therefore at first more of an idea of the progressives. As we have seen, it was then rapidly taken over in the 1950s by the most conservative economists, particularly those of the Chicago school. However, while all authors are agreed that Andrew Court was the father, in 1938, of the hedonic method, often considered to be the method used to settle conflicts over statistics about quality, none of them¹² mentions the reasons that motivated him at the time. Andrew Court was an economist in the automotive industry and not an official statistician; by factoring quality into the measurement of price changes over time, he was able to show that the price actually paid by the consumer (and not the nominal price actually experienced at purchase) was lower than the artefact of price evolution. He could thus argue to the government that the industry, which was successfully holding down selling prices, should be freed from constraints and ‘charges’ (Stapleford, 2009, p. 315).

Few economists and statisticians stress the uncertain and conventional nature of quality. Most of them take for granted the classification hypothesis, deeming the “real”

¹² With the notable exception of Thomas Stapleford.

quality of goods to have been unambiguously and exogenously defined, as though inscribed in the goods' (Eymard-Duvernay, 1989, p. 332). As it happens, quality is the inextricable result of the perception of producers, the subjective perception of the consumer and also of norms, collective standards, laws and hidden conventions. Both the definition of quality and how it is measured are the result of forms of agreement. Their social validation may be industrial (by the producers), market-led (exalting individual subjectivity), civic or domestic, deriving from interpersonal relationships. In actuality, measurement encompasses a bit of all these aspects of quality, but it is definitely in the statistical treatment of quality that we see conflicts over distribution and wealth representation arise. When it comes to conflicts about wealth, this becomes obvious when the topic is quality: what quality counts? Is it a matter of creating classifications of the technical specifications of goods? What about the relational characteristics of services? What is the impact of consumption on well-being? Do we need to factor in the durability of goods? As to conflicts about distribution, as has already been pointed out, putting inflation aggregates into regulatory provisions necessarily creates conflicts around distribution, with an underestimate of inflation tending to act as a deflationary measure and vice versa. Although the statisticians would have preferred that "production standards be 'objective'" and "beyond the reach of the different market participants" (Eymard-Duvernay, 1989, p. 346), in actuality they have long been incorporated into the protocols used by the investigators (as it is the price collector's job to note if the features of the goods whose prices are recorded have changed, or if the good available belongs to the same 'class of product'), and by the statisticians of the INSEE offices that enter this information into their data-processing systems. In time, hedonic econometric methods took over, at least in part and for a time.

The principle of the hedonic method is based on Lancaster's vector of characteristics theory, in which it is assumed that goods can be decomposed into a variety of characteristics and objectively measured. 'The process of decomposition makes it possible to obtain a measure for each characteristic. However, this still leaves the problem of how to aggregate these measures. Implementation of the utility function, with a range of consumer preferences, then repositions the analysis within the framework of a market analysis, with goods being replaced by characteristics' (Eymard-Duvernay, 1989, p. 339). Once the data on the characteristics of a good has been compiled along with the prices 'of a sample of different varieties of the same generic product', it is possible to assign an implicit price to each characteristic (Moati and Rochefort, 2008, p. 76). Econometrically, the hedonic method consists of multiple regressions. The regression coefficients value the characteristics and are taken as the 'implicit prices' of the characteristics (op. cit., p. 76). 'All that remains is to apply this series of implicit prices to the actual characteristics of the new version to estimate what its price would have been if it had been simply a straightforward translation of its specific characteristics. The difference between this theoretical price and the actual price then lets us separate the quality effect from the 'pure' price variation' (op. cit.).

While in an ideal hedonic function all the qualitative or quantitative variables *that affect consumer utility* must be taken into account, quality then being defined by the change in consumer utility, in practice the objectification of quality criteria is very much fuzzier and more arbitrary—or 'based on convention', if it is agreed that we are dealing here with a 'practical and technical convention' adopted by statisticians. Often the information is limited to the characteristics found 'in the statements of the producers' themselves. When pricing options on an automobile, statisticians refer to

the catalogue listing the product features and the price of each one (Lequiller, 1997). François Eymard-Duvernay stresses (1989) that ‘the existence of definitions of quality that are made objective and stable over time will lead to the development of intermediaries, independent of the contracting parties, whose role will be to verify the correctness of the transactions. Whereas market pricing rests on an examination of the desires written into contracts, defining standardised qualities opens the possibility of checking product quality against a database external to the contracts’ (p. 336). Outside parties also intervene to specify criteria exogenous to quality, giving rise to the classification hypothesis. Lequiller (1997) points out in passing that ‘AC Nielsen France was quite willing to provide INSEE, at no cost, with extremely detailed data about certain markets under a joint research programme that began in 1997’ (p. 24).

The hedonic method, with its use of econometric methods, is often presented as an objectivised solution to the problem of taking account of quality in price measurement. From this perspective, it offers the eternal promise of intellectual progress (Schultze and Mackie, 2002, p. 64; Piketty, 2013¹³) and makes possible the technical and depoliticised objectification of a definition of ‘quality’ whose normative content is troublesome to statisticians and economists. However, extending its use in order to capture quality effects is viewed very differently by different authors. Some, including economists of the Banque de France (Chauvin and Le Bihan, 2007, p. 21) assert quite categorically that ‘correcting for quality effects is now commonplace’, while others, more numerous, believe that the method turns out to be not broadly applicable and is restricted to certain goods, both in the USA (Greenlees and McLelland, 2008) and in France (Moati and Rochefort, 2008, p. 76). There are few quantified estimates of the share of goods covered or of the share of total consumption that they represent. In 2001, Moulton put the share of American consumption expenditure covered by this method at 18%. However, since only durable goods are included, the figure is undoubtedly lower. The failure to apply the hedonic method more widely can be explained by several factors. First—and this is the argument most frequently advanced by the official statistical authorities in France—the high cost of compiling the constituent characteristics makes it an increasingly less attractive methodological candidate at a time when public funds are in short supply. Second, the objectification of the constituent characteristics, although always negotiable in the case of physical goods (hedonic pricing experiments with refrigerators or personal computers [the hardware] are frequently cited), might appear to be a reasonable method; however, it is significantly trickier to use in the case of intangible goods, such as computer software or services with a high relational content. Finally, it is significant that, as early as the beginning of the 2000s, critical assessments emanating from mainstream academics were beginning to undermine the credibility of the hedonic method. Thus, the literature includes this new kind of critical assessment, such as that given by the MIT econometrician Hausman: ‘Unfortunately, I do not think that a hedonic approach is correct in general. The hedonic approach used by the BLS is a ‘pure price’ approach, which does not capture consumer preferences with the combination of quantity and price data that are the fundamental basis for the demand curve and the related expenditure function. This hedonic approach cannot be used to calculate a true cost-of-living index’ (Hausman, 2003, p. 35). These new denigrators of the hedonic method are advocates of ‘constant

¹³ ‘[the method of national accounts] is not, for all that, perfect. In particular, it is not based, for now, on any objective measure of the quality of services provided (though progress in this area is in sight)’ (p. 155).

utility indices', thereby rehabilitating cost of living indices, adopting purely utilitarian theoretical approaches and making new methodological choices. The article by the economist François Magnien published in France in the year 2000 in *Economie & Statistique* and that by Jerry Hausman published in 2003 in the *Journal of Economic Perspectives* are splendid exemplars of this 'turning point'. The direct downward effect on the general level of prices that this kind of method produces is explicit in these articles. Thus, Hausman notes that 'a cost of living index is based on the minimum level of income needed to reach a given utility level at two different time periods given the prices and goods available in the economy' (Hausman, 2003, p. 25). He even suggests approximating this 'minimum level of income' by the consumer surplus (p. 27).

2.3 *The durability of goods vs consumer utility*

A number of trends observed during France's post-WWII expansion and still at work in business practices are left out of the treatment of quality, casting doubt on the positivism claimed at times for these econometric methods. The durability of goods and, more broadly, environmental considerations are absent from both the in-house and external debates. In agricultural products and foods, for example, the spectacular gains in productivity recorded from 1950 to 1980 came about at the expense of taste and nutritional value or even to the detriment of health (use of pesticides, calorie-laden products). Similarly, in manufacturing no one talks about manufacturers' strategies of planned obsolescence. The basic reason is that in most cases statisticians employ hedonic methods to estimate the characteristics of quality based on the statements of producers, who one cannot help but feel are reluctant to list criteria on their specifications sheets suggesting a decline in the quality of their products. Still, the question of changes in the cost of maintaining a certain level of well-being raises touchier questions in other ways, whether in terms of negative or positive externalities of business activities, and more generally in terms of the variety of factors that goes into well-being independently of the consumption of baskets of goods and services. The question of well-being viewed from the angle of *care* is not broached in these works. Little or no improvement has been made in accounting for quality in service businesses, which remains the thorny question in terms of 'quantity' and 'volume' statistics.

Some economists believe they have solved this bias, taking as their starting point consumer utility, the alpha and omega of standard consumer theory. While the notion of constant utility goes back to Konus (1924), it was for a fairly long time confined to a small group of thinkers. The idea of 'equal utility' for the consumer can be found in Lequiller (1997, p. 12); but as the author himself acknowledges, 'This notion, difficult as it is to define for one consumer, is all the more so for millions of consumers' (op. cit.). Since the early 2000s, however, papers putting forward this concept have multiplied, as it has the virtue of being consistent with standard theory, *while downplaying the convention-based nature of quality by reducing it to the notion of individual utility*. In France, the studies by Magnien and Pougnaud (2000), which draw directly on American research, pointed the way, having tested the concepts of constant utility by means of a database purchased from the Nielsen agency. 'The CUI, say the authors, is not only a theoretical concept: its existence is based on mass consumption products such as coffee, cooking oils and washing powders' (2000, p. 87). Ten years later, the studies by Patrick Sillard and Lionel Wilner (2015), which draw directly on Hausman (2003, op. cit.), are very explicit on this: 'This concept exactly meets the concern for

measuring the cost of living. Such an index is in fact supposed to portray the change between two periods in the consumption expenses that a typical consumer must budget to maintain his or her utility at the same level as in the reference or base period' (Sillard and Wilner, 2015, p. 759).¹⁴ The use of a constant utility index, legitimised by the fact of being imported from the Anglo-Saxon world and consolidated by technological and legal advances¹⁵ in the use of scanner data, has several benefits. It closes off the debate about the conventionality of quality, which ceases to be a worthwhile concept and is replaced by the more 'rigorous' term, as its promoters would have it, of 'utility for the consumer'. It continues to fuel the research of mainstream economists. Most of all, it supports the reign of the cost-of-living index and shuts down the consumer price index as conceived in the 1920s. In our opinion, it does nothing to settle the questions about social norms of quality for a sustainable society and well-being for all.

Conclusion

Far from taking orders directly from a single government as it did in the 1950s, the statistics office today is at the mercy of a number of (perhaps subtler) interdependencies with politics. Measuring inflation is a case in point: the disputes put new actors on the stage and restrict the roles to experts in economics and political science. This migration of disputes can be linked to the technical citadels (technical methods, technical language) that have been erected between civil society and the instrument of government and that sometimes cast a deceptively apolitical aura over economists, but linked as well to a definite weakening of the unions and to their withdrawal as organisations from certain debates. INSEE is faced with the task of looking for solutions while at the same being constantly concerned to guarantee the institution's soundness through the stability of its accounting conventions. For their part, mainstream economic theoreticians are continuing their research in ever greater detail and are waiting for the 'right moment' (Vatin, 2013) to put their findings *into practice* through the intermediary of the official statistics.¹⁶ The concrete innovations that are pushing the 'old' price index towards a cost-of-living index (chaining, geometric means, hedonic methods, cash register data, etc.) also have an undeniable cost to them in light of the complexification of business practices. In reality, this complexification has yet to be captured and defies the tools applied. The innovations provide microeconomic foundations of utilitarian value to the macroeconomic index. As shown by the thorny question of quality measurement, these foundations hold within them a possible collective order that does not proceed from explicit collective agreement. The self-sufficiency of economics is also coming about through these discrete choices. The experts' stranglehold on the controversies, to the disadvantage of the trade unions, has caused macroeconomic statistics to shift away from a universe of controversy to one that appears to have been stabilised,

¹⁴ This is *de facto* the most common interpretation of these 'constant utility indices'.

¹⁵ In France, the 2015 Digital Act stipulates, in a clause directly linked to scanner data, that the Minister of Economics can decide that 'companies should pass on the information stored in their databases in order to meet the need for an identified statistical output'. Guarantees are offered in return 'by laying down strict criteria governing the purpose, confidentiality and security of the data transmission' (*Lettre d'information de l'Insee*, no. 2, March 2016: 'Big Data et Statistique Publique').

¹⁶ Sillard was saying exactly that when he wrote in 2013 that 'the recent availability of scanner data really enables us to contemplate putting into practice the concept of a constant utility index' (p. 27).

despite the evidence from analyses of real economies. This shift has had the effect of making the construction of indices much more technical and is a way to consolidate the microfoundations of the Keynesian macroeconomic tools.¹⁷

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¹⁷ All the volume indicators (economic growth, productivity) are based in one way or another on a deflationary process based for the consumption part of GDP, on the CPI.

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