Labour

A Heterodox Approach

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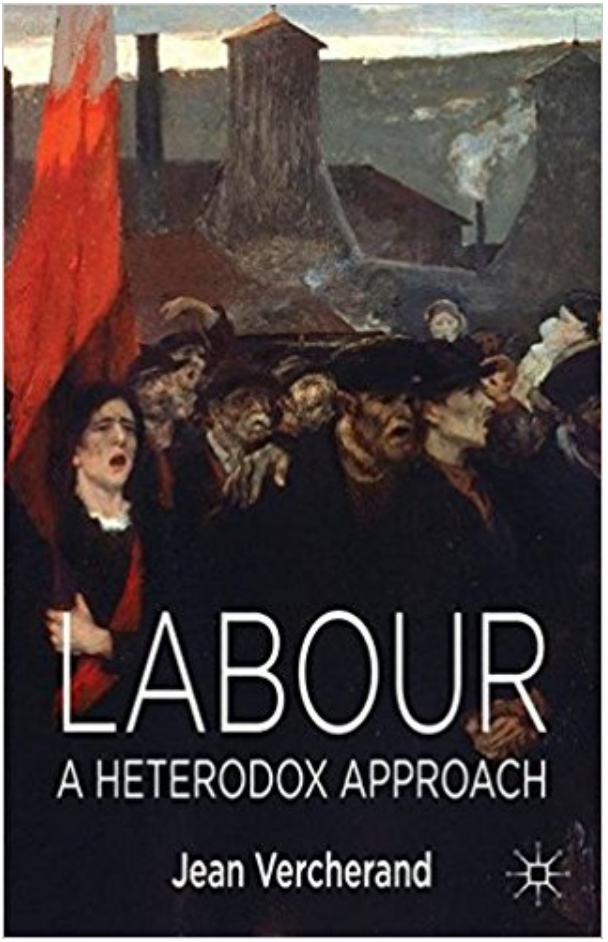

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Preface

I want first to defuse any potential misunderstanding. Readers skimming quickly through this work may get the impression of being confronted by the figures and concepts of orthodox economics. They may also think that there is perhaps a contradiction between the book's title and its contents. This is not the case, but a preliminary explanation is necessary.

A huge paradox exists in economic science. On the one hand, neoclassical theory now predominates throughout the world, although its capacity to explain – in particular, to explain the labour market – is poor or at least very limited. On the other hand, heterodox theories (I think first and foremost of the institutionalists and regulationists) remain in the minority, whereas they rely on a far more concrete description of historical reality. What is the reason for this paradox? In my opinion, it is due to the fact that neoclassical theory is based on a set of concepts – a toolbox corresponding to the basics of microeconomics – whose capacity for analysis and application has no equivalent. The problem is to know how to use these tools to solve which question and with what hypotheses, since it is not the tools that make a theory but the way in which they are used.

The events of May 1968 in France led me to specialise in economics in order to understand the society in which I lived. I quickly dismissed neoclassical theory without really understanding it; it appeared far removed from reality, a reality I experienced by working on my parents' farm and in a factory during my studies. I then began studying Marx, which led me to focus on the regulationist school that was influential in France; above all, I attached great importance to history (especially the *École des Annales*, with Marc Bloch and Fernand Braudel, among others).

Why history? The great difficulty that confronts any scientific approach in economics and social sciences when one is validating or rejecting a theoretical hypothesis is that it is rarely possible to perform an experiment, all other things being equal. Yet even failing this, one can still study the actions of human beings in space and time; that is, study the two dimensions of reality: the geographic and the historical. If one must choose one of these two dimensions, history should be preferred, as it lets one go beyond the intellectual, ideological and political modes that are specific to each period and spread through space due to the

effect of mimetism. As the same political choices can often be found in each country, the interest of geographical comparison is lessened. Furthermore, a scientific approach is not limited to applying a hypothetical-deductive procedure to a problem to be studied. It also includes an inductive approach (with multiple echoes between the two), prior to the formulation of explanatory hypotheses. This inductive approach consists in renewing observations of the problem to be studied in time and space and under different angles by calling on data from other disciplines. As we all wear theoretical spectacles, this reduces the risks of reality-related strabismus. In sum, geographical and, above all, historical analyses are essential for conducting a trial by verification in the hypothetical-deductive approach in the economic and social sciences, and they are equally so for constructing pertinent research questions in the inductive approach.

Thus, after working in the field of historical studies, I decided to return to economics at the beginning of the 1990s. It was then that, by reading and rereading *Economics* by Paul A. Samuelson and several good manuals on microeconomics (*Microeconomic Theory*, by J. P. Gould and C. E. Ferguson; *Éléments de microéconomie*, by P. Picard), I discovered the following:

(1) Classical and neoclassical concepts can be linked. (The contribution of neoclassical economists consisted in reasoning the notions of utility and cost not only in terms of totality and average – which is what the classical economists did – but also at the margin, with notions of marginal utility and marginal cost. And with regard to cost, it mattered little whether they were measured in terms of an abstract notion of labour, as did Marx, or in monetary units. It is simply a question of the choice of measurement units.)
(2) It was possible to go back over Marx's economic reasoning much more precisely and completely on the basis of neoclassical concepts. In other words, just as Marx (and Sismondi before him) built a heterodox theoretical corpus based on classical concepts (inherited from Adam Smith and David Ricardo), a priori neoclassical concepts could also be used for this purpose.

For example, in the different editions of *Economics*, Samuelson for a long time quoted an old workingman's saying: "Whether you work by the week or the day, the shorter the work the better the pay." By quoting this saying – without justifying its presence – Samuelson was suggesting that the reasoning put forward by workers had a kernel of truth, in that they

sought to situate themselves on the labour demand curve of companies to collectively maximise their salaries. Indeed, in the 19th century, before the introduction of collective bargaining, the labour movement had repeatedly organised offensive strikes aimed at the reduction of working time to raise global wages during the expansionary phase of an economic cycle. This aim met with total incomprehension from orthodox economists. On the contrary, Marx considered it the most important goal for the labour movement. I use microeconomic tools in this book to demonstrate that the labour movement's drive for shorter working time can be perfectly well validated, but I also show that it has limits.

To my mind, heterodox economists, whose conclusions and way of approaching things (especially their capacity to remain open to the work of the other disciplines of the humanities) I often share, are mistaken in rejecting neoclassical theory wholesale, since the tools it employs can prove very useful for strengthening their analyses and giving them more authority, especially for explaining the recurrence of public regulation in certain markets.[1] Conversely, most orthodox economists have become so mesmerised by mathematical tools that they have all but abandoned any inductive work of examining reality, placing it in perspective in space and, above all, in time. The result has brought about the impoverishment of the issues dealt with by research in economics and a rift between economics and the other disciplines of the humanities.

Thus, this work's main objectives, through an attentive examination of economic and social history, are (1) to account for the historic recurrences of the labour market from the standpoint of economics, especially its conflictual nature, with demands for better wages and shorter working times and the public intervention these demands have brought; this is something orthodox economic theories fail to do, and heterodox theories give only cursory attention; (2) to formulate normative recommendations for regulating the labour market.

After concluding this research, it is my conviction that most economists reason with

1) *a false or biased perception of the labour market* (in this case supply): false for all the economists of neoclassical inspiration who make no distinction between a salaried employee and an independent worker regarding labour supply; biased in Keynes and his heirs insofar as they have not used the most pertinent argument in riposte to the neoclassical theory of labour supply (this is the first hypothesis developed in this book);

2) *a false or partial perception of the determinants of growth*: false for all the orthodox economists, especially supply-side ones who follow the reasoning of Say's law ("supply creates its own outlets"); partial in Keynes and his heirs in that they incorporate only short-term effects in their reasoning on growth (this is the second hypothesis of this book).

Readers familiar with the work of Karl Polanyi – much in vogue during recent decades – will recognise a link between my approach and his. However, his economic analysis of the labour market does not go very far. Today, it is mainly economists who dictate injunctions to political decision makers regarding the labour market and who are listened to most. The social and political stakes of this discipline are also considerable. When all is said and done, my analyses and normative and political conclusions range less widely than those of Polanyi but are more specific where the labour market is concerned.

This book, aimed at English-speaking readers, is a fully revised and amended edition of a work, published in French in 2006 by the Presses universitaires de Rennes, bearing the title *Le travail: Un marché pas comme les autres*. In comparison to the French edition, the present one includes a certain number of historical additions and, above all, improvements in the form given to the presentation of arguments, which remain the same in substance. The few modifications or additions affecting the substance concern the interpretation of long cycles, known as Kondratieff waves, and the interpretation of the shape of the individual labour supply curve.

Note

1. A French regulationist economist, Denis Clerc, wrote of my manual on micro- and macroeconomics that he detected "the art of judo applied to economics: he uses the strengths of his adversary to place them in difficult situations" (*Alternatives économiques*, no. 232, January 2005). It was both a nice and a perspicacious way of describing my approach.

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Glossary

AC	average (total) cost (or unit cost)
AVC	average variable cost
C	consumption
ε	elasticity
FC	fixed cost
R	income
r	income unit
I	investment
t	leisure time
MC	marginal cost
mpc (or c)	marginal propensity to consume
U_m	marginal utility
Y	national income or gross national product
Π (or π)	profit
S	saving
St	stocks (or inventories)
T	time unit
TC	total cost = VC + FC
U	utility
VAP	value of average product
VMP	value of marginal product
VTP	value of total product
VC	variable cost
L	volume of labour (on labour market)
w	wage rate
l	working time (or labour)

General Introduction

Labour is one of the rare markets[1] that have almost always given rise to specific, intensive and recurrent public intervention since antiquity. Evidence dating as far back as the Code of Hammurabi (17th or 18th century BCE) shows that it was then, as it still is, one of the rare markets whose prices are subject to scaling. In Rome the labour market was governed by different rules that prefigured the guilds of the European Middle Ages. These guilds officiated for seven centuries, pronouncing for each trade a set of rules which, today, can be associated with different branches of law, such as those governing competition, consumption and labour.[2]

At the end of the 18th century, the first industrial countries totally deregulated their labour markets, thereby bringing to an end this very long history of legal supervision. The guilds were suppressed (France) or else emptied of their substance (United Kingdom). Coalitions, meaning strikes and what were later to be called unions, were declared illegal as they were considered to be barriers to free trade and competition on the labour market. But this market, which appeared a priori to satisfy the conditions of pure and perfect competition, became a source of conflict. Economic crises – that were very rapidly perceived by contemporaries as crises of overproduction occurring approximately every ten years – threw part of the working population into distress and misery. Claims for higher wages and shorter working times became recurrent.[3] Despite prohibitions, strikes occurred, sometimes degenerating into conflicts, riots and even insurrections when the authorities intervened to uphold the law. The history of the labour market in all industrial countries is littered with violent and tragic events, a phenomenon that cannot be considered normal for a market. In parallel, ideologies emerged that criticised economic liberalism for

some and economic and political liberalism for others and aimed at solving this "social question". These ideologies ranged from socialist and anarchist thinking to the neocorporatism of Catholic socialists[4] and included intermediate currents of thought such as social democracy and Christian democracy that called into question neither private property nor the major liberal principles but deemed it necessary to protect workers. The two great tragedies of the 20th century – communism and fascism (in its different forms) – did not occur by chance. All said and done, analysis shows that they stemmed from the conflictual issue of the labour market.[5]

Finally, labour laws have been formulated in every democratic country in order to – so says the legislator – pacify labour relations. It is noteworthy that these laws do not concern the self-employed or work done at home, only salaried work. These laws are based on a limitation of working times (i.e. supply) for children, women and all employees. Furthermore, attempts to reach agreement (or coalition) between employees are no longer considered illegal (but can lead to breach of contract and dismissal) and have become a constitutionally acknowledged right.[6] Lastly, governments have imposed a minimum wage in certain countries and, above all, generalised collective bargaining regarding working conditions and pay so as to compensate for the position of weakness of one of the parties vis-à-vis the other, in this case the employee versus the employer.[7]

Therefore labour is one of the rare markets for which the supply of the actors is restricted by law;[8] it is the only market in which monopolistic behaviour (coalitions) is legal and the only one in which conflicts (strikes) are so consubstantial that they give rise to censuses by official statistics and, consequently, to international comparisons. Once again, these facts illustrate that this market is in no way banal or innocuous!

The aim of this work is, above all, to understand

- why the "free" market for labour, as it was organised at the end of the 18th century, has become so conflictual, with recurrent claims for higher wages and shorter working times;
- why legislators have come to accept the monopolistic behaviours of the actors involved (coalitions) and have formulated specific laws for salaried employment, starting specifically with the limitation of working time.

Let us be quite clear in this respect; by anticipating what will unfold further on in this work, neither the new microeconomics of labour nor

the general trend of the different contemporary theories proposed really allow taking this hugely significant singularity of the labour market into account.[9] Any economist with knowledge of the history of the labour market is well aware of this fact. What is more, the large number of economic models available constitutes an implicit avowal and makes the labour market one of the most controversial areas of economic analysis as a whole.

Two key hypotheses

To answer these questions, we start off with the facts, in particular the recurrent claims of workers' movements regarding wages and, above all, working times. The reduction of the latter – as will be seen further on – has been proposed for three major reasons, giving rise to highly specific actions carried out in clearly defined periods that sometimes overlap:

- To obtain more free time to rest, improve family life, cultivate oneself and become an active citizen in the community (this objective is common to every case);
- To obtain higher wages – that is to say "work less to earn more" and thus regulate the so-called Juglar cycle. This objective gives rise to offensive strikes during the expansionary phases of this short-run economic cycle;
- To combat unemployment – that is to say "work less so that there's work for all" – since the productivity of labour is deemed to increase more rapidly than consumption. This objective, contrary to the previous one, rarely gives rise to strikes, even defensive ones, but much more often to campaigns of claims that culminate during the downturns of long cycles called Kondratieff waves (or slow growth), such as the campaigns in favour of the ten-hour working day in the 1840s, the 8-hour day in the 1880s and 1890s, the 40-hour week in the 1930s and, lastly, a new reduction of working time in the 1980s and 1990s that resulted in the 35-hour week in France.

These claims regarding wages and working times have been satisfied many times since the 19th century by private enterprises and the public authorities.

Therefore, to take these facts into account and give a direct answer to the questions asked initially, we introduce two central hypotheses in the dominant economic corpus; that is to say, the basic or standard neoclassical model.

1. The supply of labour is not independent of demand; rather, it is dependent on this demand.

The labour market is a market unlike any other for the reasons described by the jurists who have been responsible historically for arbitrating labour conflicts.[10] The major principle of *the autonomy of free will* underlying the *contract theory* cannot apply in a situation in which most employees find themselves in a relation of exchange that binds them to employers. Indeed, employees are in a position of inferiority in this relation of exchange. Generally, they have no more than their labour power to supply the market in order to live. On the contrary, employers not only have their own labour power (that they use to produce directly and/or to manage their business), they also own or control production resources (tangible and intangible capital). This provides them with the *economic independence* that the self-employed also possess though this is not so for *dependent workers* (i.e. employees). This results in a situation of *economic dependence* whereby employees are frequently faced with the dilemma of either accepting an employer's demands in terms of working times, production rates, wage, and so on or looking elsewhere with the risk of not finding any work, having no income and ending in severe difficulty. Wage labour is therefore a market in which the balance of power between employee and employer is fundamentally asymmetric.

Regarding the microeconomic representation of this market, this means that

- employees are in no way capable of optimising their choice of labour supply but, on the contrary,
- depending on their interests and the strength they can wield (within what is permitted by the law), employers are able to influence the volume of work supplied, i.e. its duration and its intensity (rates, mental stress) and thus impact wages. Furthermore, as will be seen, jurisprudence has always acknowledged that employers have the prerogative of setting working times and that employees cannot ignore their obligation to fulfil the expectations of their employers without being sanctioned.

Therefore the supply of labour is not independent of demand but subordinated to it (or dependent upon it).

It is this aspect, according to us, that distinguishes the labour market most in comparison to other types of markets and which is the basic reason for its conflictual nature. In other terms, if we take the cross of

Saint Andrew to schematise the balance of the market, for labour we have a downwards branch (the demand curve) but no upwards branch (the supply curve). In no case can labour supply be represented by a curve which, by construction, supposes an optimisation of choice by employees. Consequently, this first hypothesis leads us to totally rethink the way in which the labour market functions at the microeconomic level.

2. It is essential to distinguish between the two types of impact exerted by technical progress on economic dynamics.

This second hypothesis concerns the determinants of growth and its possible link with unemployment. According to Solow's neoclassical model of long-term growth, economic growth depends on only two exogenous variables: demographics and technical progress. We hypothesise that this progress exerts *two very different types of impact* on economic dynamics that have to be distinguished:

- Firstly, there is the type of technical progress that takes the form of innovations in the production process. These innovations increase the productivity of factors (of labour in particular) and thus their unit incomes;[11] that is to say, they dynamise the production and supply of companies. This type is perfectly well known and is dealt with by every manual on microeconomics.
- On the other hand, technical progress exists that takes the form of innovations in consumer goods whose implications are ignored in microeconomics. As will be shown later on, this type of technical progress modifies the choice of households between consumption and saving and thus contributes to increasing the propensity to consume for a given income. In other words, all said and done, it dynamises household consumption and demand.

However, there is no reason why these two dynamics (labour productivity and consumption) should evolve at the same rhythm over a long period of time.

This premise on the dual impact of technical progress permits resolving or clarifying several theoretical questions while taking into account a number of economic and social facts. In particular, when linked to the previous premise on the asymmetry of the balance of power between employees and employers, it permits understanding campaigns by workers' movements to claim shorter working times to combat

unemployment, since they consider that the productivity of labour has increased faster than consumption. Consequently, public intervention aimed at reducing this duration becomes comprehensible.

The originality of these two premises must be emphasised from the outset, not at the level of initial ideas but rather in the way they are built and developed.

As will be seen, the first was postulated by Adam Smith and later developed by Jean-Charles Léonard Sismondi and, of course, Karl Marx. However, it has never been incorporated in the neoclassical corpus. Obviously, the subordination of employees with regard to employers has been mentioned in certain theoretical models, but never to envisage a situation in which the employer is capable of influencing the volume of work supplied by the employee (for the same wage rate).[12]

An inkling of the second hypothesis was perceived by Ernst Engel, the pioneer of the economic analysis of consumption, at the end of the 19th century. Nowadays it can be integrated in certain macroeconomic models, although it has not been the subject of microeconomic developments, which is our intention here. However, the problem, posed since Malthus in 1820, underlying this second hypothesis is that consumption may not follow the evolution of unit incomes. Contrary to Say's law, according to which production generates its own outlets and thus crises are impossible, Malthus considered that they are possible due to the absence of the public's "desire to purchase" and its accumulation of surplus savings.

Structure of the work

By drawing from the works of jurists and historians, Chapter 1 provides a synthesis of the following elements: awareness of the decidedly unbalanced nature of the contractual relationship binding employees to their employers; the recurrent claims of labour movements (i.e. trade unions) regarding wages and working times (the goals aimed at, the forms and circumstances of collective action); the history of public intervention on the labour market to protect workers and the current state of the legislation involved. This chapter also presents several economic factors linked to collective action: the divergent evolution of wages and profits during the cyclic fluctuations of the economy; the observation that the higher global wages tend to be, the shorter working times are; and the irregular evolution of working times over a long period (with respect to the evolution of wage rates). These elements will be examined for the most part in the light of the 19th century and the beginning of the 20th century,

meaning during a period in which the labour market operated in a "purer" way with respect to criteria defining pure and perfect competition, a period when coalitions were forbidden and employees enjoyed either no or inefficient legal protection at best. In short, a market operating in all its brutality.[13] Lastly, this legal and historical view will focus on France, with account being taken of other industrial countries.

Chapter 2 presents the basic neoclassical model of the labour market and, very concisely, its main shortcomings as recognised by economists. We will show briefly the incapacity of the different models to take into account the historic disharmony of the labour market, the recurrent claims made by employees and the public interventions that this market has generated.

Chapter 3 focuses on using microeconomic fundamentals to justify our *first hypothesis*, i.e. that the consequence of the economic dependence of employees is that their supply of labour is not independent vis-à-vis the demand of employers but subordinated to this demand. We then study how such a market can function and what balances result in both the short and long runs. To achieve this, close scrutiny is given to the interdependence (reciprocity) linking the demand for labour of companies to their supply of goods. We then show that during economic downturns, it is quite logical that real wage rates increase despite the increase in unemployment, thereby confirming observations made by historians during periods (19th century) when public intervention in the labour market was nonexistent or inefficient and coalitions were forbidden.

Once again using microeconomic fundamentals, Chapter 4 focuses on justifying our *second hypothesis* on the two impacts of technical progress on economic dynamics. This progress not only increases factor productivity (in particular, labour) but also the propensity of households to consume through the innovations implemented in consumer goods. To achieve this, we start from the analyses of John Maynard Keynes, who, rejecting the neoclassical hypothesis of optimised employee choice regarding labour supply (but for reasons different from ours), sought to determine the volume of labour through household consumer behaviour. Thus, we show that the dynamics of consumption (and therefore global demand) may very well fail to follow that of factor productivity (and therefore unit income) over the long run.

Chapter 5 draws lessons from the two previous chapters regarding the origin of unemployment and the means of combating it: short-term unemployment linked to overproduction/underconsumption crises that are in turn linked to the asymmetry of bargaining power between employers and employees in sharing the added-value generated; and

long-term unemployment when working times remain unchanged but the dynamics of consumption are less vigorous than those of labour productivity. In parallel, we will interpret the increase of social inequalities over the last quarter of the 20th century.

Finally, Chapter 6 provides a critical review of neoclassical theory and the major heterodoxies promulgated by Karl Marx, John Maynard Keynes and Joseph Alois Schumpeter. We show that the introduction of our two central hypotheses permit consistent and, finally, quite simple articulation between these four main approaches. In brief, these two hypotheses open the road to a broadly based theoretical synthesis.

1
The "Social Question" since the 19th Century

Introduction

The aim of this chapter is to present a number of mainly qualitative characteristics of or having to do with the labour market. These characteristics have been well established and are subject to wide consensus among the jurists, sociologists, historians and contemporary witnesses that have expressed views on the subject. However, these characteristics have been given little attention or else ignored by economists. They can be called "stylised facts", the terminology used by Nicholas Kaldor.[1] These generally very elementary facts are related to (1) the nature of the wage relation and the interpretation made of it by jurists; (2) the conflictual nature of this relation and the upheavals historically associated with it – the famous "social question" of the 19th century; (3) the content and recurrence of the claims made by employees and the organisations that represent them; (4) the reception given to these claims by employers and economists; and (5) the public intervention that this conflictual nature triggers with the edification of laws specific to only wage labour, a point that should be emphasised. In parallel, we shall examine other economic and social facts linked to this problem of salaried employment, in particular the fluctuations of the economy through different crises.

Being exhaustive in this analysis is out of the question. However, I shall pay great attention to the issue of working time, as it is the focal point of a huge contradiction between theory and reality. Indeed, for two centuries, dominant economic theories (classical, neoclassical, Keynesian, supply-side) have never validated the idea that the State should intervene to reduce this duration, since such intervention is deemed incongruous or Malthusian. But history shows that these two centuries have

seen a long succession of claims and public interventions. One of the specific objectives of this work is to solve this contradiction. Although historians are obviously well aware of the history of working time on a general level, it has not been subjected to in-depth study, and it remains "a thoroughly modern issue".[2]

1 An evidently asymmetrical power relationship

1.1 An asymmetry already acknowledged by Adam Smith

For both historians and contemporary observers, this asymmetry of power is patent. Thus, according to the authors of *Histoire générale du travail*:

> In the 19th century, employers often wielded a kind of feudal power which, in the best cases, was softened by paternalism; in parallel factories were often organised by using military methods of discipline and hierarchy as models. Workers had no guarantee and employers ruled as absolute masters. Whereas the latter used market laws to determine wage levels, the discipline in workshops was founded on the most arbitrary principles.[3]

Apart from a few variations, this statement holds for every industrial country of the time. Even Adam Smith, the father of political economics, was aware of this asymmetry.

> What are the common wages of labour depends everywhere upon the contract usually made between those two parties [the employee (worker) and the employer (master)], whose interests are by no means the same. The workmen desire to get as much, the masters to give a little as possible. The former are disposed to combine in order to raise, the latter in order to lower the wages of labour. It is not, however, difficult to foresee which of the two parties must, upon all ordinary occasions, have the advantage in the dispute, and force the other into a compliance with their terms. The masters, being fewer in number, can combine much more easily; and the law, besides, authorises, or at least does not prohibit their combinations, while it prohibits those of workmen. We have no acts of parliament against combining to lower the price of work; but many against combining to raise it. In all such disputes the masters can hold out much longer. A landlord, a farmer, a master manufacturer, or merchant, though they did not employ a single workman, could generally live a year or two upon

> the stocks which they have already acquired. Many workmen could not subsist a week, few could subsist a month, and scarce any a year without employment. In the long-run the workman may be as necessary to his master as his master is to him; but the necessity is not so immediate.[4]

One would be hard put to make things clearer! The final sentences of this citation from Adam Smith emphasise that this asymmetry of power existed independently of the inequality of the law upheld at the beginning of the Industrial Revolution, between employees and employers, and that this was also the case in France. Employees mostly lacked any independent means of existence, generally having only their labour for hire. On the contrary, the masters, who own not only their own workforce but the means of production, are far more protected from the uncertainty boded by the future.

We know that capitalism at its emergence drew on the force of its first cohorts of proletarians taken from a large and miserable population, landless and roofless peasants ruined beforehand by the fiscal and usurious pressure of the Ancien Régime, feudal reaction, the appropriation of communal land, natural disasters and wars. Then the technical progress and economies of scale generated by industry in turn impoverished and ruined concentric swathes of artisans. Lastly, the increase in labour productivity had an increasing impact on agriculture and, with competition from "new countries", led to a growing divide between the stagnating living conditions of peasants incapable of modernising their practices and those of employees, which nonetheless improved despite economic crises. Thus, labour supply has been constantly fuelled by successive swathes of artisans, shopkeepers, farmers and so forth, unable to compete in an economy in which labour productivity continues to progress. And when this reserve of increasingly economically dependent labour becomes exhausted, recourse to immigration becomes a possible solution.

After having observed this asymmetry of power between employers and employees, Adam Smith observed that the natural and spontaneous behaviour of employers is to tacitly exert constant pressure on employees.

> We rarely hear, it has been said, of the combinations of masters; though frequently of those of workmen. But whoever imagines, upon this account, that masters rarely combine, is as ignorant of the world as of the subject. Masters are always and everywhere in a sort of tacit,

> but constant and uniform combination, not to raise the wages of labour above their actual rate. To violate this combination is everywhere a most unpopular action, and a sort of reproach to a master among his neighbours and equals. We seldom, indeed, hear of his combination, because it is the usual, and one may say, the natural state of things which nobody ever hears of.[5]

Following Smith, Jean-Baptiste Say[6] reutilised this analysis of the asymmetry of power, but, like Smith, he did not go beyond the stage of observation. Whatever the case, this does not lead to calling into question the main liberal principles underlying the functioning of the labour market. When all is said and done, it was Sismondi and, above all, Marx who most sought to determine the economic and social consequences of this relation (cf. §4.5 below).

1.2 A contemporary manifestation of asymmetry: stress and harassment at work

In the 19th century, the asymmetry of power in the labour market was apparent in the physical pressure subjected on the work provided by the employees and on their working time and work rates. Today this asymmetry is more apparent in mental and psychological forms. Apart from the recurrent problem of mass unemployment, the issue of labour henceforth includes aspects such as the suffering, stress and moral harassment that employees can endure in the workplace. The book by the psychotherapist Marie-France Hirigoyen on moral harassment in the workplace has met with immense and unexpected success,[7] a tangible sign of a reality many employees endure in silence. What is more, it is a reality particularly well-hidden by modern management methods based on the individualisation of empowerment, with evermore ambitious targets, sometimes accompanied by a reduction of the resources required to achieve them. The least difficulty necessarily stirs self-guilt. Corporate management can draw advantage from this individualisation of empowerment to exert moral pressure, sometimes in perverse ways, to make the employee more efficient or more docile or to push them towards resignation. Over the last few years in France, a series of suicides in certain large companies by managers heavily committed to their work have had a considerable impact on opinion.

A number of international studies have highlighted the importance of psychosocial problems occurring in the workplace. In the European Union it is estimated that 22% of employees suffer from stress at work, while 5% are subjected to harassment and 5% are victims of physical

violence.[8] The International Labour Organization (ILO) has evaluated the cost of occupational stress as amounting to 3% to 4% of the gross national product (GNP) of the industrialised countries. The social partners have been called to question about these issues at European level, and an agreement was signed in 2004; it became part of French law in 2008.

Obviously, stress and harassment do not exist only at work, and even then they do not always originate from management. However, there is general consensus that certain management practices implemented over the last two or three decades have considerably contributed to the development of such psychosocial risks.

These phenomena demonstrate that despite labour laws designed to protect workers, whose origins date back to the 19th century, the asymmetry of power between employers and employees is still evident at the beginning of the 21st century, although in far more insidious forms.

1.3 An asymmetry that lawmakers and jurists have had to acknowledge

1.3.1 The contract of engagement of service or the fiction of free will

It is often recalled that originally, according to the Civil Code of 1804, the supply of labour in return for remuneration was qualified as a *contract of engagement of service*. The lawmakers of the time grouped both the supply of commercial services to customers by independent workers and the engagement of servants under this heading, however, thereby highlighting that the Code's authors made no great distinction between the two types of labour relationships.

Wage labour was at that time perceived only as a relationship in which servants hired themselves out, generally for a period of a year, usually to landowners and the upper middle classes. Lawmakers did not foresee the development of this wage relationship. Quite the contrary, in the political scheme promulgated by the French Revolution, it was to remain and constitute the temporary condition through which individuals passed before they set up as independent producers. The principle of equality of heritage, the sharing of communal property, the sale of church property across the nation, as well as that of emigrants and suspects, the abolition of feudal rights and so forth should have led to this goal. However, the emergence of the Industrial Revolution wrecked this ideal of a *democracy of small independent producers, peasants and artisans who would produce and trade in complete freedom. Each and all installed! Each his own master.*[9]

The relationship binding an employee to an employer was still considered one in which two perfectly independent wills acted freely and on an equal footing. Therefore an agreement between such entities could only be fair: *nobody is unjust unto themselves*, asserted Jean-Jacques Rousseau.[10] The employee's obligations resulting from this contract of engagement were limited to performing the work required from them, whereas it was the employer's obligation to pay the agreed wage.

With its succession of workers' grievances, strikes, sometimes violent revolts, always suppressed with the greatest severity, the 19th century provides abundant proof that this *independence of will* of the contractors on the labour market was biased. The position of the employees, often bereft of any means of existing independently and only possessing their arms and brains, was in fact economically and psychologically inferior to that of the owners of productive resources free of the uncertainty of what tomorrow might bring. Working time could be extended excessively at the discretion of the employer, who could pay derisive wages bearing no relation to the added value generated.

> In fact, this contract [engagement of service] is a contract of adhesion by virtue of which the employer imposes the conditions and the remuneration of labour whose burden he tends to reduce as much as possible.[11]

In addition, at the beginning of the 19th century, the worker was in no way equal, according to the law, to the employer. According to article 1781 of the Civil Code, in case of dispute over the payment of a wage, *credence is given to the master's assertion*. In the labour tribunals responsible for settling disputes between the parties, the employers enjoyed absolute majority over the workshop foremen, who were the sole representatives of the employees since the workers were excluded. Likewise, the latter were subject to the control of both the employers and the police, with the reintroduction of the "worker's logbook"[12] in 1803, a document introduced in 1781 and abolished by the Revolution. Lastly, following the Le Chapelier Law of 1791 prohibiting coalitions (i.e. any grouping together of persons to defend common interests), the political authorities were for a long time afterwards more intransigent towards employees than employers. The same unequal treatment by the law was meted out in the United Kingdom with the Master and Servant Act of 1823.

The reason for these judicial inequalities is edifying. The corporations – for which many rules had become obsolete over time – nonetheless

protected workers in different ways though they made them obliged to their employers. Their abolition in France by the Allarde law (2–17 March 1791) was intended to promote the freedom of entrepreneurship and was based on the egalitarian desire to abolish all privileges and power, both patronal and feudal. However, it was accompanied by a large number of acts of insubordination of workers vis-à-vis their employers, strikes and public disorders.[13] In reaction to this, the government passed the Le Chapelier law (14–17 June 1791), then hardened the constraints imposed on workers at a time when they were almost indistinguishable from a population of vagabonds and beggars watched over and repressed by the authorities. Nonetheless, although bridled, workers' grievances remained ever present and were occasionally aggravated, with the risk of outbreaks of violence.

Finally, the "Labour Question" continued to haunt the century, with the government resolving, after much hesitation, to intervene to protect wage workers, bending under the strength of the great principles of liberty and equal rights proclaimed by the French Revolution.

1.3.2 The distinction between dependent and independent labour

All manuals on labour law invariably start by explaining that the object of this branch of law does not address all human work. For example, it excludes domestic work within the family. Likewise, it does not concern the labour of independent workers, farmers, artisans, shopkeepers or the liberal professions. Apart from a few marginal restrictions, it concerns only work done for a wage. Labour law is based on the fundamental distinction between independent work and dependent work in the service of another. The relationship of dependence is not only economic, it is also legal; the employee is placed under the authority of an employer who gives them orders to perform a task. Labour law is therefore limited to subordinated work. Consequently, a salaried manager who manages a company is considered to be performing non-subordinated salaried work.

However, the distinction between independent and subordinated work, work subject to or which should be subject to labour law, is sometimes difficult to establish. Over the last few decades, to lower their costs, companies have entrusted certain tasks previously done by their own employees to piece workers. The latter were formerly independent but underpaid, in a precarious position and dependent on their clients. Jurisprudence has led to the requalification of these company contracts as employment contracts. Experts on labour law have given the following definition of economic dependence:[14] *the position of workers when they earn their main means of livelihood from the work they perform*

for the person who employs them. However, an employee with exceptional talents for which companies compete and are ready to pay the Earth can be considered to be an independent service provider for whom the protection afforded by labour law to employees is relatively superfluous. Some legal experts[15] consider, in theory, that it is the criterion of economic subordination that should above all be used to characterise an employment contract. As for myself, I subscribe wholeheartedly to this point of view and judge that this criterion is fundamental, taking precedence over all others. Whether or not alternative solutions exist to replace the contractual relation of a worker is also an essential facet of this characterisation.

1.3.3 The nature of the employment contract: a relation of subordination by which an employee "exchanges a freedom against a security"

It is noteworthy that the law does not define the nature of the employment contract. Its characteristics stem from the jurisprudence to which it has given rise through time on the basis of the treatment of the disputes between employers and employees that have been submitted to the courts.

According to the eminent legal experts Jean Rivéro and Jean Savatier:

> The idea that always recurs in rulings is that of the **legal subordination** in which the employee that hires out his services places himself in relation to the employer. What characterises the employment contract is that the employee does not limit himself to undertake the performance of a task or the provision of service, which can also be done by independent workers, but he places himself under the **authority** of the employer to perform work. As they supervise the work, the employer has, correlatively, the **profit** and the **risks**. In practice, their capacity manifests itself in the right to give orders to the worker, in the right to benefit from the product of the work, and in the obligation to pay the worker even if they do not, eventually, obtain any benefit from the work. The general spirit of the employment contract is, finally, the exchange of a freedom against a security: the worker gives up his freedom in the organisation of his professional activity by placing himself under the employer's authority; but by virtue of the contract they acquire, for as long as the contract exists, the right to a wage independently of the economic fluctuations of the company.[16]

This renouncement of part of one's freedom constitutes "the logical counterpart of the absence of any economic risk taken on by the employee in their activity".[17]

This succinct characteristic of the wage-earning relationship – that is, *the exchange of a freedom against a security* recognised by courts throughout history – is essential. From the economic standpoint, we can add that the "value" (or utility) provided by this security will be as great for the individual as the risk of remaining unemployed if he refuses the conditions stipulated by the employer. Thus, to obtain or keep this security of income, employees will be ready to sacrifice a part of their freedom in measure with the income gained. Further on, I shall show how this dilemma can be treated from the standpoint of the economic theory of choice.

1.3.4 Labour law: the employer's de facto power within a legal framework

Labour law is not only law that protects dependent workers. Thus, for legal experts:

> Labour law enshrines the right of power in the same way as common law... [This] power as understood by labour law is first a relation in fact. The power exercised by the employer had no need to wait for legal formalisation in order to express itself. The economic dependence of the worker suffices to place them under the domination of their employer, under their **de facto power**. And it is in reaction to this de facto power that labour law has been built. This factual power relationship has been recognised, specified, legitimised and formalised by the law. The result is a legal, de facto power, generally referred to as the "employer's power to direct" ....Jurisprudence now considers that the employer's power is a faculty granted by the employment contract. This results in significant legal consequences: the failure by an employee to obey an order issued by the management is a breach of contract; on the other hand, when an employer abuses their power, they also breach the contract.[18]

This analysis of the origin of labour law is sufficient in itself. Obviously, by virtue of this de facto power, 19th-century employers could easily impose their demands regarding working hours. More specifically, the first stone in the construction of labour law consisted in limiting this duration.

2 The recurrence of economic crises during the industrial era

2.1 Crises of short duration

From the beginning of the Industrial Revolution to the Great Depression of the 1930s between the two world wars, capitalist countries were

shaken by major recurrent crises. Contemporary observers quickly became aware of this phenomenon. In his well-known report written in 1840, Villermé mentioned that four had already occurred in France and explained that he had *listened to many manufacturers and wealthy merchants who stated that in the best circumstances, they return every 6 or 7 years*.[19] Marx spoke of *ten year crises*, and in 1860 Juglar published a work devoted to their periodicity. Later, Schumpeter baptised these fluctuations Juglar cycles.

These cycles were given close attention starting from the second half of the 19th century. Interest in them waned during the thirty year boom that followed World War II, since they had disappeared. However, over the last thirty years, economists have renewed their interest in them, as they started reappearing at the beginning of the 1980s. On average they cover periods lasting from about eight to nine years, given that the interval between two crises can vary from six to eleven years. A cycle includes four phases:

- The *expansion* phase is characterised by increased production, higher prices, longer working hours and higher employment.
- The *crisis* signals a sudden reversal of the previous trend. After the first signs of faltering economic activity, sales begin to stagnate in certain sectors, indicating overproduction which is rapidly propagated to the entire economy.
- This reversal of trend is followed by a *depression*, meaning a cumulative process of falling prices, lower production and shorter working time, along with growing partial and total unemployment. However, this cumulative process tends to attenuate and stabilise after a certain time.
- Finally, this stabilisation leads to a *recovery*, which is rather slow and hesitant at the outset but which becomes more tangible. Prices and production slowly recover and trigger a new phase of expansion.

Although these cyclic crises are well-known to historians and economists, their theoretical interpretations are far from reaching consensus.

In his *Economic History from the Industrial Revolution to World War I*, Jean-Charles Asselain synthesised their characteristics after having analysed the leading industrialised countries of the time. Due to their brutal suddenness, crises can be dated with precision, to within a month or even a day when linked to a stock market crash or a bank being declared insolvent. However, *economic activity often starts falling before the financial crisis as such*,[20] leading to the assumption that the latter is

the consequence rather than the cause of the crisis of overproduction. Furthermore, *it is regularly the activities that displayed the greatest dynamism during the previous expansionary phase which draw the economy into crisis*.[21] The author observed that this conclusion appears at first sight to agree with Schumpeter's hypothesis on the role played by innovations in the origin of cyclic crises. During the depression phase,

> typically, the sector of capital goods ... collapses out of proportion with the general decline of business activity. There are three main reasons for this: firstly, of course, because surplus production dissuades investors from creating additional production capacity; then because the slump in profits dries up an essential source for financing investments; and lastly, because the fall in prices and the deterioration in the outlook for profitability inhibits the incentive to invest. The fall in investments in turn impacts in the short run on the general level of activity, and in the medium term on the potential of increased production. All these interactions are reversed during the expansionary phase.[22]

Regarding the distribution of added value between wages and profits, he concludes:

> The most salient fact is that profits increase more proportionally in the expansionary phase and decrease more than proportionally during the depression phase. As for the **total wage bill**, given the variations of employment, it evolves in the same direction as profits (even if the **share** of wages within global income varies contra-cyclically).

Jean-Charles Asselain adds a note on this essential point: "the **nominal** (hourly) wage in the 19th century increased during the expansionary phase and decreased during the depression phase. But the evolution of the **real** (hourly) wage was often more favourable during the depression phase (due to the fall in prices) than in the expansionary phase (price increases)."[23]

In brief, when the total added value produced increases in the expansionary phase, the total wage bill increases but less rapidly than total profits. The reverse is true in the depression phase, and whereas unemployment grows, the real wage rate actually increases rather than falls, contrary to what is assumed by the basic neoclassical model of the labour market! This is often more the case than during an expansionary phase, at least it was in the 19th century. It is noteworthy that this very

general observation concerns historic periods during which the State rarely intervened on the labour market (or inefficiently when it did) and when employees had hardly any rights. In truth, this phenomenon was already well-known. Thus, for the authors of a *Histoire générale du travail*, during crises,

> wages resist better than profits: since they are less elastic, wages increase more slowly than profits during periods of prosperity, but in more difficult times they remain stable whereas profits and rent from property collapse.[24]

2.2 Long-term fluctuations

Another type of fluctuation has been brought to light more recently, a fluctuation more subject to debate than the previous fluctuations since its amplitude is weaker and, above all, it lasts a lot longer. These long fluctuations are known as Kondratieff waves, after the Russian economist who, according to Schumpeter, had studied them most between 1920 and 1925.[25]

In spite of their recurrence about every fifty years, economists refrain from referring to them as cycles. These waves were first observed in relation to prices, after which it was confirmed that production generally evolved in line with them. They are characterised by a phase of strong economic growth lasting from two to three decades, followed by a phase of slow-growth of about the same length of time. These two successive phases were identified quite early on by certain observers, but it was not until the end of the 19th century and the beginning of the 20th that their recurrence was recognised. However, the long economic slowdown at the end of the 19th century (1873–1896), occurring after an unprecedented industrial boom period, was clearly identified by contemporary observers. Indeed, clear evidence was not available until the impressive work of Gaston Imbert in 1959, which demonstrated the concordance between the evolution of prices and that of production. Lastly, this fluctuation of economic activity recurred in very marked manner in the second half of the 20th century, when a slowdown succeeded the post-war boom during which the pace of growth was faster than anything yet seen.

However, debate over these long waves is still heated and concerns their periodicity, their simultaneity or not between countries and, of course, how they should be interpreted, even if most economists concur with Schumpeter that they originate in the major innovations that emerge grouped in time.

The chronology cited most frequently is the following:

1790–1848, with a turning point in 1815,
1848–1896, with a turning point in 1873,
1896–1945, with a turning point in 1920,
1945–?, with a turning point in 1973.

3 Working time and wages during a long cycle

3.1 The extension of working time at the beginning of the Industrial Revolution

It is known that working time increased at the beginning of the Industrial Revolution. In France, Louis-René Villermé attested to the truth of this in 1840,[26] and in the United Kingdom, John Rae,[27] who pleaded at the end of the 19th century for shorter working time, recalled that for Adam Smith the normal working time for a miner was 8 hours a day when he wrote *The Wealth of Nations*, published in 1776. This figure was confirmed by Arthur Young during the same period. However, when discussions were being held on child labour some 60 years later, working time was far longer and appeared to have reached a peak between 1835 and 1840 in France, with from 13 to 15 hours being worked a day.[28] Afterwards, this duration remained steady for three to four decades, before being reduced considerably between 1880 and World War II.

Although there is no doubt as to the increase of working time at the beginning of the 19th century, historians are more divided about how to interpret it.

A contemporary observer, Villermé, explained that

> The costs required to commission the machines, at least those motorised by a steam pump, the high price that had to be paid for them, and the little effort they required from the workers, lengthened working hours in the factories. What the machines saved in terms of human fatigue, they added in terms of duration of work, which is why the working day became so long.[29]

John Rae gave a similar explanation for the United Kingdom: the amplitude of investments drove company owners to amortise them as quickly as possible by extending the working day, aided in particular by the development of artificial lighting. This logic, which incriminated capitalist behaviour, was obviously at the heart of Marx's analysis of the exploitation of labour, with his concept of absolute surplus value.

However, this intensification of labour preceded the Industrial Revolution if we consider that it began with the steam engine as driving force. It has in fact been proved that this intensification lasted throughout the 18th century. Therefore, whatever the truth of the previous interpretation, it does not suffice as an explanation. Two other explanations have been proposed.

On the one hand, the demographic surge in the 18th century led to a rise in food prices, forcing the population to intensify the work it supplied so it could maintain its level of consumption.

On the other hand, more recently, the historian and economist Jan De Vries explained, step by step, that this intensification of labour stemmed from an increase in the consumption of households wishing to purchase an array of new goods made by large numbers of craftsmen, despite the fact that productivity remained stagnant.[30] De Vries demonstrated that although unit incomes decreased during the 18th century, due to rising food prices, the global incomes of families increased due to the augmentation of the volume of paid work. This augmentation was above all due to the revocation of religious holidays, the abandoning of Easter Monday and the extension of work to every member of the family (women and children). Many families in the 18th century were faced with major difficulties in finding enough to eat due to recurrent escalations of prices for staple foods while simultaneously owning expensive objects such as clocks and watches. Thus the Industrial Revolution, which is generally assimilated with a series of innovations leading to an increase of factor productivity (labour in particular), was preceded by a series of innovations in consumer goods responsible for this intensification of labour.

3.2 The irregular division of gains in productivity between income and leisure

Figure 1.1 is based on the data provided by Olivier Marchand and Claude Thelot[31] and shows the relation between working time in industry and construction[32] and the hourly wage of a worker (in constant French francs, 1995). Obviously, the further one goes back in the past, the greater the caution required when looking at the figures. However, the general trend in the evolution of working time has been corroborated by different surveys and by most of the analyses performed by historians.

If we take the year 1836 as our starting point, when working time was longest (3,313 hours a year), it can be seen that it fell to about half this figure (1,707 hours)[33] in 1995. During the same period, the hourly cost of a worker – which can be assimilated with their hourly wage before

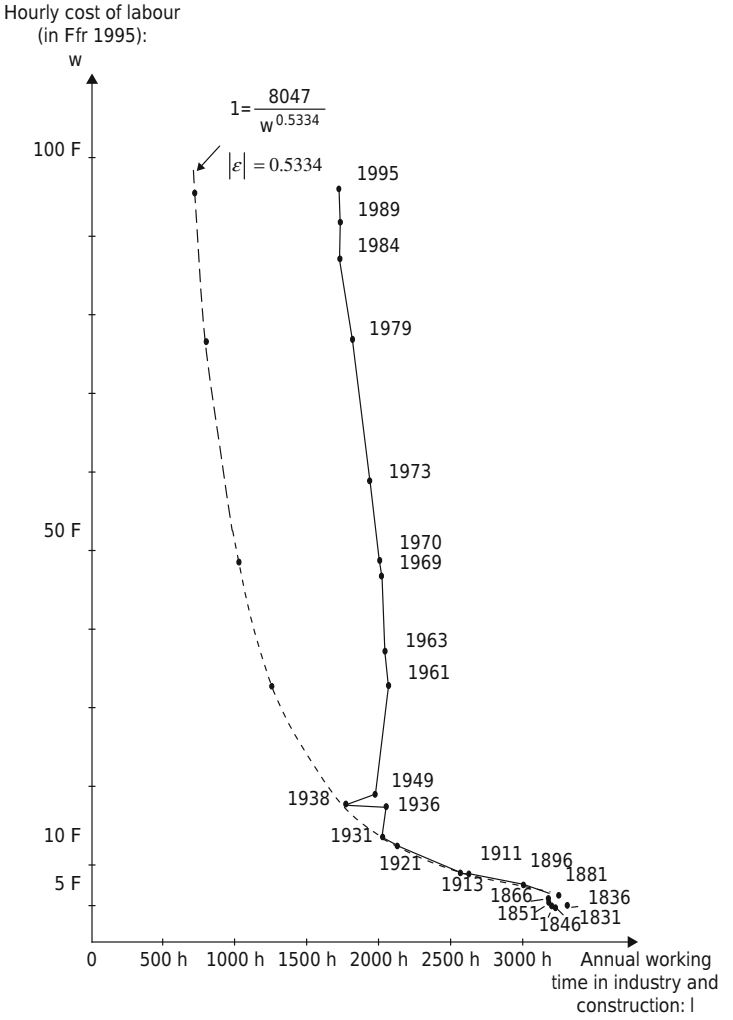

Figure 1.1 Real labour supply curve in the long-run

the deduction of social charges – increased by a factor of 25.8. As for the global income of labour (thus before the deduction of social charges), it has increased more than tenfold (in fact multiplied by 13.3).

Observers are generally impressed by this halving of working time in one century. Along with Guedj and Vindt, one may wonder why. Is it because work has represented a fundamental social value upheld from

the 16th century onwards with the emergence of bourgeois values and the Protestant Reformation? Society is still strongly impregnated by the value it attaches to work. What is more impressive, if one is interested only in figures, is the considerable increase in labour productivity (viewed from the angle of its unit cost over a long period). Whatever the case, this reduction of working time continued to disappoint the hopes expressed by many utopian socialists in the 19th century. One example of the latter was Robert Owen, who could take pride in his success as an industrial entrepreneur. He estimated, in 1827, that a day's work could be completed in three hours provided that production was better organised economically and socially.[34] Much later, in 1931, Keynes, who was neither a socialist nor a utopian, predicted that in a century – that is, by about 2030 – employees would work 15 hours a week.[35]

In fact, the major decrease in this duration occurred between 1880 and World War II. According to the figures of Marchand and Thelot, annual working time fell by 36.5% between 1881 and 1931, only 50 years, whereas the hourly cost of labour had more than doubled (a 2.4-fold increase) and the global income of labour (before redistribution) had increased by 55%. By contrast, between 1931 and 1995, a period of 64 years, annual working time fell by only 15.5%, whereas the hourly cost of labour increased 7.2-fold and the global income from labour by 6.1-fold. Thus the reduction of working time has not at all been regular, whether correlated with time spent or with the rise in the wage rate (before redistribution). Finally, regarding the latter criterion, although this reduction has continued up to now, had we followed the same trend as that observed between 1881 and 1931, we would have worked about 700 hours a year in 1995 (instead of 1,703 hours)[36] and fewer than 650 hours in 2010!

But there is more. Between 1938 (or 1949) and the 1960s, the working time of employees actually increased.[37] However, this increase cannot be explained by post-war reconstruction. As early as 1948, production in France had returned to its (low) level of 1938, and in the following year (1949), it exceeded the maximum reached previously in 1929.[38] This means that in terms of productive activity, the country had already overcome the combined effects of the major crisis of the 1930s and the destruction of its productive capacity despite the fact that housing reconstruction had not yet been completed. However, economic growth was to continue at a considerable pace for 25 more years, including 10 in which the annual working time increased.

4 Workers' claims

Conflicts between employees and employers are as old as the wage relationship. However, they multiplied during the Industrial Revolution[39] despite the suppression of the right of coalition being maintained for a very long period in most industrialised countries. In France, the legal arsenal for prosecuting strikes was further strengthened during the First Empire and under the July Monarchy. In all, nearly 10,000 workers were imprisoned for this crime between 1825 and 1864.[40]

More precise knowledge of workers' claims and the arguments they used to back them started to become available at the end of the 19th century. This was so because the injunctions stifling expression by workers loosened and illiteracy among them started to regress. Lastly, the three of four previous decades prior to World War I were likely those in which the Labour Movement expressed its thinking most brilliantly. That being said, the Labour Movements of the industrialised countries followed essentially the same objectives and reasoning.

4.1 A dominant theme: higher wages

In a remarkable work, Michelle Perrot analysed the claims behind about 2,000 strikes in France between 1871 and 1890 – that is to say, between the crushing of the Paris Commune in 1871 and the first general strike on 1 May 1890 – since this form of protest had ceased to be considered a criminal act in 1864 and the right to form trade unions was recognised in 1884. She formulated the following typology.[41]

> Workers' claims covered a very small number of themes of which that of wages predominated, especially wage rates, representing 48% of the claims expressed. ... Getting higher wages whenever possible, then defending them if threatened, is the alpha and omega of workers' action and the core of coalition ....
>
> The claim for a shorter working day ... came second; it was present in 13% of strikes. However, it was rarely the sole claim ... and was nearly always linked to demands for higher wages or overtime. It was often only an indirect means of reaching a higher objective. ...
>
> Issues of industrial discipline: relations with managers, rules, fines, dismissals, etc., made up a fairly large group of grievances. ...
>
> Mentions of labour problems and productivity occur 215 times [in the 4,560 claims giving rise to 1,997 strikes]. These were above all protests against increases in productivity ... and competition from foreign workers. ...

> Lastly, there are certain remarkable absences in the table: only 1.6% of the claims concern safety and social security. ... However, examination of the dominant themes should not overlook less common or marginal claims that were destined to become important later on. ... For example, the occurrence after 1880 of strikes in defence of unions augured a new era. ...

4.2 The "special" place occupied by the reduction of working time

Movements in favour of reducing working time deserve special attention in the light of our first hypothesis, stated in the General Introduction; that is to say, that labour supply is not independent of demand but partially subordinated to it.

Michelle Perrot first observes that:

> the reduction of working time holds a special, contradictory and ambiguous position in workers' claims. Quantitatively, it comes in second place .... However, [it] lies at the heart of the major battles and marks the road taken by workers to victory. From twelve hours a day in 1848 to forty hours a week at the time of the Front Populaire, from the five and a half day week (known as the "English week" on the continent) to paid holidays, it constitutes the surest of acquisitions and the most serious of the "leaps forward".[42]

As for strikes held to reduce working time,

> [their] physiognomy is well-defined. In 90% of cases ..., offensive strikes were clearly cyclic, linked to favourable circumstances. ... These movements were not in the least spontaneous and resulted from long reflection ...; in three quarters of cases, the trade unions decided and led them. ... The offspring of the organisation, these strikes were scriptural and generated texts. Here the text reigns, with petitions addressed to the public authorities and the National Assembly. Liberal practices had long been thwarted – since Guizot – by this stumbling block of working time. ... The State could no longer forego its responsibility: the organisation of time, after that of space, had befallen it.[43]

It is probably due to this aspect of public order, which appears incumbent on all employees, that the reduction of working time gives rise to movements that often propagate from one profession to another and even from one country to another.

This periodic recurrence of the theme of limiting working time, linked to economic upswings, at first sight appears to contradict the observations made in France by a witness at the end of the 19th century, Charles Rist. For him, "[The movement in favour of this limitation] is becoming increasingly intense among the working classes" during the 1840s. "In 1848, agitation ... reached a summit; once the revolution had ended, it was the workers' first concern; it was also their first and only success." For the rest, "it was the energetic pressure of the working classes that swayed the government [to promulgate this limitation]".[44] Rist even spoke of the "violence with which the workers claimed a reduction of working time".[45] This movement then became calmer during the following quarter century. Lastly, it reappeared with increasing vigour from 1876 onwards, to reach "an unprecedented amplitude and force" in 1890: "the reduction of daily working time ... was discussed in the newspapers almost every day ... and was one of the claims made by workers that was the best-known and accepted by the public".[46]

In reality, the contradiction was virtual. On the one hand, the durations are not the same: the short business cycles between 1871 and 1890, according to Michelle Perrot; the long cycle of the 19th century, according to Charles Rist (1840 and 1890 correspond to phases of slowed growth of the Kondratieff waves seen in §2.2). On the other hand, Rist not only referred to strikes when he studied the theme of claims to reduce working time; he also examined all the forms this claim took and, above all, its importance in the workers' discourse and how it was received by all the employees and society. Analysis of the reasoning developed by the Labour Movement allows clarifying the periodicity of these claims and the forms in which they were made.

4.3 The goals targeted by the reduction of working time

The objective of reducing working time is undoubtedly social, but it is above all economic; the aim is to prevent unemployment and increase wages. This relation between working time, wage levels and unemployment emerged as early as the first half of the 19th century. Thus, in France, at the end of August 1848, while the National Assembly readied itself to raise the maximum working day back to 12 hours, Pierre Leroux pleaded in favour of maintaining the decree of 2 March (cf. §5.1.1 below) by explaining that the "extension of working time would have no effect on labour demand. On the contrary, it would lead to a new reduction of wages by strengthening competition between workers".[47] Then, Marx and the First International reached the same conclusion. This reasoning

is illustrated by the following arguments, which were put forward by striking workers in 1881:

> Labour is a good; or since there is a supply and demand for all goods, the price increases when there is a shortage of goods .... The only way to guarantee that the bosses will always need us is for us to work as little as possible, that's to say as few hours as possible.[48]

This type of analysis, in which the Labour Movement appropriates the mechanisms of the market for its own profit, was common at the end of the 19th century and at the beginning of the 20th, particularly during demonstrations in favour of the eight hour day every 1 May (see Table 1.1).[49]

Table 1.1 Poster calling on workers to demonstrate on 1 May 1890

LABOUR DAY: INTERNATIONAL DEMONSTRATION ON 1 MAY
FOR THE EIGHT HOUR DAY AND LEGISLATION TO PROTECT WORK, RESULTING, WITH THE EIGHT HOUR DAY CONSTITUTING THE ESSENTIAL BASIS, IN THE GUARANTEE OF A MINIMUM WAGE, IN THE LIMITATION OF CHILD AND FEMALE LABOUR, IN ONE DAY OF REST A WEEK AND THE ELIMINATION OF NIGHT WORK, EMPLOYMENT OFFICES AND BARGAINING.
The demonstration of 1 May was voted by the International Socialist Congress of Paris in 1889 in favour of the
THE EIGHT HOUR DAY
Because the eight hour day means work and bread for many workers who congregate in front of factory gates with empty bellies; there where in fact, for example, instead of two workers working twelve hours, it should be three working eight;
Because the eight hour day means the end of periodic layoffs caused by the progress of machines, the reduction of work for those who work too much, providing work to those who have not got any;
Because the eight hour day means raising wages by eliminating the homicidal competition of unemployed workers against employed workers and the degradation of wages that this competition causes;
Because the eight hour day means eight hours of sleep and eight hours of leisure, which means life, freedom and action for the working class
Because the eight hour day will benefit small shopkeepers, by increasing the consumer and purchasing power of their worker customers, following the obligatory increase in the number of employee workers and their wages, they being more numerous and better paid.
Consequently, the activists of each quarter are invited to organise local meetings to sign petitions in favour of the eight hour day, for which they will find the form at the "Bourse du Travail" (office no. 5).[a]
Large meetings will be organised in the evening to celebrate this

Continued

Table 1.1 Continued

FIRST INTERNATIONAL LABOUR DAY
The petition of the Trades Unions and the socialist groups of France will be taken on 1 May to the National Assembly, by a delegation composed of the Bureau of the Local Committee (National Federation of Trades Unions of France), delegates given mandate by different Trades Unions, and the elected socialist representatives of the National Assembly and the Municipal Council. The delegation will leave from the Place de la Concorde at two o'clock p.m.
WORKERS OF PARIS,
You will celebrate 1 May with this order and this dignity that dynamise the international proletariat on its march to freedom.
LONG LIVE THE EIGHT HOUR DAY!
LONG LIVE THE DEMOCRATIC AND SOCIAL REPUBLIC!

[a] The "bourses du travail" were founded at the end of the 19th century and were a specifically French component of the labour movement. Initially a labour exchange and a place for obtaining information and popular education, their function is now limited to providing head offices to different trade unions.

Note: The International Labour Congress chose 1 May as the date for claiming the working day of eight hours in homage to the workers' meetings of May 1886 in Chicago. They had been violently repressed, resulting in eight death sentences, of which four ended in execution.

If we examine the behaviour and arguments developed in closer detail, it can be seen that three types of objective are superposed, giving rise to specific actions carried out at definite periods; however, these objectives and actions could overlap.

- The objective of emancipation

By lifting the servitude of work and by devoting less time to it, the workers could rest more, improve their health, not seek alcohol to blunt their suffering, better take on their family responsibilities, educate and cultivate themselves and become fully aware and active citizens at the workplace, with their unions and in their towns and cities. In short, the reduction of working time has emancipating virtues. In France, the posters of the CGT (*Conféderation générale du travail*) illustrated these themes admirably at the end of the 19th century and the beginning of the 20th.[50] This objective was ever present in the background.

- Rarefying labour supply to raise wages and level out short business cycles

The Labour Movement wanted to reduce working time to raise wages, by calling offensive strikes during the expansionary phases of short business

cycles (known as Juglar cycles, which, we recall, last 8 or 9 years). This strategy expressed the implicit hypothesis that the labour demand of companies was *inelastic*: the reduction of working time will lead to a more than proportional increase of the wage rate in such a way that global salaries will rise.

We now know that labour supply is generally inelastic.[51] But how did the Labour Movement know this intuitively in the 19th century? The answer is simple. At a time when the mobility of workers was limited and when working times and wages were very heterogeneous, since labour laws were either non-existent or inefficient, it had been observed that global wages tended to be as high as working time was short and vice versa. Villermé had already observed this in 1840 in his famous survey of the French textile industry.[52] Likewise, Marx observed that in England it was a "notable fact that the longer the working day in a branch of industry, the lower the wages were". In support of this he cited several edifying reports by factory inspectors.[53] In the United States, an old worker's slogan proclaimed, *Whether you work by the week or the day; the shorter the work the better the pay.* Paul A. Samuelson also cited it in his famous manual on economics, used by generations of students around the world,[54] suggesting that the workers' reasoning was interesting in that they sought to situate themselves on the labour demand curve of companies in order to maximise their wages. However, Samuelson's analysis of this adage went no further, nor did it cover the workers' claims accompanying it and everything they signified. When reviewing the figures linked to wages and working times of the major survey conducted by the Labour Office[55] in 21 branches of French industry between 1891 and 1897, it is possible to highlight, in the same way, a very significant negative correlation: the average daily wage of a branch was as high as the working time in it was short.

At the same time, for the Labour Movement, the reduction of working time during expansionary phases necessarily exerted a countercyclic effect, thereby smoothing the Juglar cycle. That is to say, by raising wages, this reduction must contribute to slowing down runaway production, profits and investment and thus prevent crises of overproduction. By studying a large number of claims, Michelle Perrot gives the following explanation: for the Labour Movement

> reducing working hours … leads to full employment, not by increasing production, but by spreading it. At the same time, it lessens the effect of slack seasons and crises, which the worker, imprisoned in

> the prevailing economic mindset, attributes more spontaneously to surplus production than to a lack of consumption.[56]

However, after World War II the goal "work less to earn more" disappeared from the discourse of workers' unions, as did the idea of regulating short business cycles (which had in fact disappeared). This stemmed from the fact that stronger labour laws (collective agreements, minimum wages, 40-hour week, etc.) contributed to homogenising working time and wage scales in the developed countries in such a way that it was no longer possible to make the observations made in the 19th century.[57] Henceforth, the trade unions representing wage earners made their wage claims in the framework of collective bargaining, fighting to index officially agreed wage rates to inflation and productivity gains. As will be seen, the disappearance of these short business cycles following the war appears imputable to this indexing of wages, whereas their reappearance at the beginning of the 1980s seems imputable to their deindexation.

- Reducing working time to combat unemployment

The Labour Movement saw the dynamic of increased labour productivity as generally tending to be greater than that of consumption; so it is better to reduce working hours if everyone is to keep their job. Thus, the congress of the First International (International Workingmen's Association) at Lausanne in 1867 considered that

> since machines replace many men, they should be balanced with the number of workers, by reducing working time so that everyone can be occupied and thus consume.[58]

Rather than destroy the new machines, it seems that the Labour Movement realised early on that the reduction of working hours was the solution against the risk of unemployment driven by technical progress, which both worried and fascinated it. Edward P. Thompson reported that in the 1820s, English weavers organised petitions claiming a reduction of working hours to stem unemployment.[59] The objective of the 10-hour day emerged very clearly in the 1840s in industrialised countries (United Kingdom, France, United States, etc.) and was then constantly put to the fore. However, it became particularly insistent at the end of the downturns of long Kondratieff cycles and gave rise to increasingly intensive opinion campaigns when the threat of unemployment was strongest rather than to strikes, even defensive ones.

Besides the campaign to claim the right to a 10-hour working day in the 1840s, there was also one in favour of an 8-hour day in the 1880s and 1890s (witnessed directly by Charles Rist, who was mentioned previously), and then a campaign for the 40-hour week followed in the 1930s.[60] This last met with sympathy that went far beyond the working classes. A large portion of opinion, including several economists, was convinced that technical progress caused labour productivity to increase faster than consumption. According to Alfred Sauvy, this belief in the necessity to "share work" became *exceptionally intense* in France and the USA in 1935, provoking his ire, something to which I shall return.[61] Furthermore, the International Trade Union Confederation (ITUC) adopted the objective of the 40-hour week at its congress in 1931, as did the CGT in France. The International Labour Organization examined the issue the same year and adopted a convention in its favour in 1935.

Lastly, after a relative eclipse during the Post-War Boom, the claim to reduce working time to stem rising unemployment intensified in a large number of industrialised countries, beginning at the end of the 1970s and continuing up to the present. This claim can be synthesised by a popular slogan: *Work less so that we can all work*.[62] Most developed European countries have implemented this reduction, either by lowering the legal working time or by favouring part-time work.

In addition, the Labour Movement considered that the reduction of working time resulted in making *work more productive and thus national industry more competitive*.[63] To maintain production levels, companies were encouraged to develop more efficient organisations and techniques. (In the domains of working time and labour productivity, the United Kingdom and the United States[64] were both more advanced than France.) In return, the trade unions looked to benefit from the situation: *maximum production, minimum time on the job for the maximum wage*, proclaimed the CGT in its programme in 1917.[65] A long road had been travelled since the Luddites smashed the first machines at the beginning of the Industrial Revolution.

4.4 Opposition from the employers

If all employees have repeatedly claimed shorter working times, their employers have generally been opposed to giving in to such claims for three reasons.

- Limiting working time by law infringes on their sovereignty within their companies and their freedom to negotiate contractually with their employees.

- It leads to higher production costs, resulting in a loss of the competitiveness of businesses and the country in the face of foreign competition.[66]
- It encourages laziness among workers.

Starting from the law of 22 March 1841 relating to child labour – the first law limiting working time in France (see §5.1.1 below) – all the above criticisms can be found, including the last. Thus, Cunin-Gridaine, Minister of Trade and a factory owner at Sedan, opposed raising the age at which children were sent to work from 8 to 10 years-old. As he explained:

> The habit of order, discipline and work must be inculcated early on. … A child who starts in the workshop at 8 years-old, shaped by work, having become accustomed to obedience, and possessing the first elements of primary instruction, will be more able at 10 years-old to withstand fatigue, be more skilful and better educated than a child of the same age brought up until then in idleness.[67]

At the beginning of the 20th century, Martin Saint-Léon – close to if not an adherent of Catholic socialism – made the following harsh denunciation:

> The very heavy responsibility due … to the intransigence, and sometimes blindness of a large share of French employers when faced with the evidence, rebelling against the lesson of the facts, incapable of preventing conflict by making a timely concession to perfectly well-founded claims, waiting for the latter to be torn from them by constraint.[68]

The same opprobrium was expressed at every passage of legislation to shorten working time, in 1848, 1900, 1919, 1936 and, of course, 2000.[69] There are the well-known accusations made against Léon Blum at the trial held at Riom, blaming him for having introduced the 40-hour week and bridling production, favouring "the spirit of enjoyment" and thus contributing to France's defeat in 1940. More recently, French employers vigorously denounced the "authoritarian" law introducing the 35-hour week and the additional expense it incurred for companies. Echoing these criticisms, the right-wing governments in power between 2002 and 2012 never ceased their admonishment, accusing this law of hindering growth and contributing to the *debasement of work* in the opinion of French society.

However, in the 19th century, enlightened employers – among whom Robert Owen stands out – favoured reducing working time, taking up some of the arguments of the Labour Movement. They judged that it was possible to produce as much in less time by organising production better. Workers would be more productive if they were less tired, and the deployment of advanced machines was to be encouraged. They also considered that shorter working hours would act as a brake on runaway production and thus reduce fierce competition between companies during crises of overproduction.[70] However, to be efficient, these conditions would have to apply to everyone and thus be subject to a decision made by the public authorities. But John Rae in the United Kingdom and, above all, Charles Rist in France greatly emphasised the contradiction that constantly arose between the collective interest, expressed by the representatives of each social group, in reducing working hours and the individual interest, which drove each economic actor to break collective rules in order to derive personal benefit. This contradiction obviously concerns businessmen, but it could sometimes affect employees, as reported by John Rae for the United Kingdom.

Finally, the conclusion is that for almost two centuries there has been no fundamental change in the attitudes and arguments expressed by the "social partners" – employers and employees – regarding working time. But each time, after one or two years of protest, such reductions are taken for granted by public opinion. Thus, despite a series of amendments since 2002 to make the 35-hour-week law more flexible, very few companies have challenged the collective labour agreements reached.

4.5 The criticisms made by economists of the reasoning of the Labour Movement

In 1898, Charles Rist esteemed that the heads of industrial companies in France were less opposed to limiting working time –since they could finally perceive the advantage of fixing common rules – than were the theoretical economists. And according to him, politicians were greatly mistaken in paying too much attention to them![71] As for the historian and economist Emile Levasseur, he cited a British Member of Parliament who opposed the introduction of laws to reduce working time at the beginning of the 20th century: *experience has shown that many [negative] predictions made against the Factory Bill have not come about* and that this legislation *has contributed to improving the lot of the working classes without causing prejudice to their employers*.[72] These observations by Rist and Levasseur are still valid. Whereas the history of reducing working time is one of two centuries of claims and interventions, dominant

economic theories (classical, neoclassical, Keynesien and, now, the more or less universally dominant supply-side doctrine) have not validated the soundness of such reductions. These claims and interventions are deemed incongruous or Malthusian: incongruous because if working time must be reduced, then it should occur on its own without the State having to intervene; Malthusian because it will limit the volume of economic activity.

However, as seen from the beginning, Adam Smith, the founder of the classical school, was aware of the asymmetry of the wage relationship, the effect of which was to push workers to accept the vital minimum, though this observation did not lead him to advocate specific public intervention on the labour market. Likewise, Jean-Baptiste Say, in deference to Smith's analyses, refused any public intervention, explaining that low wages will reflect on the sale price of goods, in turn profiting workers. By taking this view, he joined a school of thought that was to last a long time since lowering costs effectively reflects in the long-term on the sale price of goods and the purchasing power of consumers. Furthermore, Say considered that economic crises could not occur due to his eponymous law of outlets: *supply creates its own demand*. By producing goods, companies distribute in parallel income of an equivalent value that is used to purchase these goods. The flexibility of prices on markets makes it possible to adjust the production and consumption of different goods. Money is only a vector for trade and cannot be desired for itself but only for the goods it allows men to acquire. On the other hand, Sismondi considered that the asymmetry of the wage relationship was the source of the cyclic crises of overproduction that occurred at that time every eight to nine years. He argued for a better distribution of the fruits of labour in favour of the workers. By doing so, he joined in the school of reasoning in the short-run, as will be seen in Chapters 3 and 4. What is more, he was already in favour of reducing working time to avoid unemployment. As for Say's law on outlets, it was criticised by Sismondi and above all by his contemporary Malthus, who considered that crises could stem from an absence of "wishing to buy" by consumers; that is to say, an excessive desire to save.

Thus, right from the beginning of the 19th century, classical economists were divided about the labour market, with the minority arguing along the lines of Sismondi for more or less radical intervention by governments: Karl Rodbertus, Charles Dupont-White and, of course, Marx. The others, forming the great majority, went along with Say's logic and placed their trust in the self-regulating capacity of the market. In France, this grouped a series of economists, including Frédéric Bastiat,

who exerted strong influence throughout the 19th century. At the beginning of the 20th century, the historian and economist Georges Blondel, who was close to the Catholic socialists, emphasised the negative seduction that Bastiat exerted on the French bourgeoisie and its political representatives *through the charming way [he] had of clothing the optimistic doctrines of the orthodox school*.[73] Even economists such as Rist and Rae, who were in favour of reducing working time at the end of the 19th century, nonetheless espoused the idea for social rather than economic reasons. As did many of their colleagues, they rejected the reasoning of the Labour Movement which sought to use this reduction to raise wages and lower unemployment. They said that these two objectives could not be achieved by limiting the production of wealth despite the fact that they agreed that, with slightly higher wages and more efficient organisations and techniques, it would be possible to produce as much in eight hours as in much longer working days and thus maintain global wages.

The hold of orthodox economists began to weaken in the latter part of the 19th century and throughout the first half of the 20th, whereas the influence of socialism, the cooperative movement, institutionalists and Christian socialism grew. Without bringing anything new to economic reasoning, these currents generally backed social laws in favour of the Labour Movement. In Germany, the State Socialists, especially Adolph Wagner, were behind laws introducing a social security system as early as 1880. In France, the economist Charles Gide, a Protestant and declared member of the cooperative movement, became the apostle of friendly societies and cooperatives. In the United States, John-Rogers Commons defended the introduction of collective bargaining on the labour market to correct the asymmetry of power between employees and employers. Following the publication of the encyclical *Rerum novarum* in 1891, Catholic socialists argued in favour of "fair wages".

Nonetheless, the introduction of the 40-hour week in France in 1936 renewed criticism from most economists. Alfred Sauvy was a vehement and influential critic, and he particularly contested the idea that reducing working time could lower unemployment. Technical progress, he explained, led not only to increased labour productivity but also to increased incomes and purchasing power for society as a whole. Obviously, he concurred, this progress would result in fewer jobs in the sectors of the economy whose outlets had become relatively saturated. But, conversely, this progress would create jobs in those sectors undergoing expansion due to the augmentation in income that it generates. Sauvy called this the "spillover effect" on employment. For him, any increase in income would automatically be used for consumption, in

particular to the benefit of the sectors undergoing expansion, in such a way that the spillover effect was assumed to absorb the variation by 100%. This is fully in line with the logic underlying Say's law on outlets. Although Sauvy favoured reducing working time for social reasons, he considered that doing so could only weaken production (supply); thus it would not only be inefficient in combating unemployment but could even increase it. He thought that if the limitation placed on working time were too rigid, bottlenecks might occur in certain sectors, harming the entire economy and employment. This then was the reason why he vigorously denounced the procedures for implementing the 40-hour week. Regarding this specific point, Sauvy's criticisms are, a priori, admissible (though he seems to have exaggerated the consequences); indeed, the authorisation by the Front Populaire government in 1936 of overtime beyond 40 hours was restrictive.[74]

Immediately following World War II, the reduction of working time was no longer on the agenda, at least in Western Europe, given the exceptional economic growth in progress. On the other hand, in the United States, the major auto workers' union AFL-CIO, worried about increasing automation, especially in the automobile industry, demanded that working time be reduced to 30 hours a week in the 1950s and 1960s; a demand that was turned down. This was the period when Keynesian analysis held sway. According to this perception, unemployment was due to insufficient global demand that had to be stimulated by expansionary monetary and budgetary policies. What is more, the idea of reducing working time to prevent or combat unemployment was considered misleading and Malthusian; it amounted to considering economic activity a cake whose size is invariable in the short-run and that it is necessary to share.[75] However, this issue of reducing working time could become embarrassing for the followers of Keynes. Indeed, Keynes based his criticism of neoclassical economics on the rejection of the individual supply of labour, though he did not take into account the implications to which this rejection led. If working time does not reflect the optimal choice confronting employees, what then determines its evolution? Given that this duration has shortened considerably though irregularly over more than a century, who decides on its evolution?

"Supply-side economics" developed at the end of the 1970s in reaction to the failure of Keynesian policies to stem growing unemployment in the industrialised countries. Taking the opposite stance to the Keynesian approach, its proponents considered that economic problems and unemployment came from the supply-side rather than that of demand, that a series of hurdles burdened business activities: excessive taxation and

over-rigid labour laws. In this respect, the limitation of working time was once again deemed perfectly Malthusian. It should also be added that a return to classical orthodoxy that placed great faith in the self-regulating nature of markets was evident. To this way of thinking, the very idea of the State intervening to reduce working time was absurd. Individuals are free to work or not and for a duration such that they optimise their choices. Consequently, why should the State get in the way of the free choice of workers who, above all, made such choices optimally?

At this stage, I anticipate the development of my two central hypotheses by making an initial comment. On the one hand, the first hypothesis runs counter to the standpoint which states that if working time must be reduced, this reduction will occur spontaneously. On the other hand, my second hypothesis runs counter to the standpoint which states that the reduction of working time has a Malthusian effect on economic activity, despite the fact that it can be socially justifiable. Demand-side (i.e. Keynesians) and supply-side economists, who have constantly opposed each other over the last thirty years, nonetheless agree on the following point: the level of economic activity depends only on the level of mobilisation of factors of production and, of course, the level of productivity allowed by technology. The weakness behind the reasoning of these two schools of thought stems from the fact that they consider that the consumption of households depends in the long-run only on income. At most they incorporate the role played, but only in the short-run, by interest rates and confidence (uncertainty regarding the future) in the use of income, between consumption and putting it by (saving). This is so because in the long-run, these two variables are corrected and no longer play a role. The role played in the medium and long-terms by the appearance of new consumer goods (i.e. innovations in these goods) is completely underestimated if not ignored. Furthermore, if we return to the metaphor of the cake whose size is assumed to be invariable, the Labour Movement has never considered economic activity as such. On the contrary, it has always considered that although technical progress makes society capable of doubling the size of the cake, it is not necessary to devour twice as much!

In conclusion, it was mainly Marxian schools of thought that favoured reducing working time for economic reasons; for example, the *École de la régulation*[76] in the last quarter of the 20th century. However, the theoretical foundations of these schools weakened their impact; quite the contrary of the neoclassical economists whose foundations are solid but whose historical references are very weak. For Marx, working time is a core element of his theoretical analysis of the exploitation of workers.

For him and the activists of the First International, reducing it was the most important of all the claims made by the workers, even more so than that of raising wages.[77] However, he says practically nothing in his work about in what circumstances and to what level it was advisable to reduce this duration.

Mention can also be made of certain ecological schools of thought whose claim to reduce working time is based on explicitly Malthusian aims intended to reduce every threat to our environment and build a sustainable world (cf. the school of the "shrinking economy"). In our view, growth can perfectly well be generated by services (private and/or public) whose ecological footprint is nil, and there is little reason to justify why we should deprive ourselves of them. Furthermore, it is not possible to make presumptions about future innovations in the production process that could reduce the ecological footprint of certain consumer goods without it being necessary for us to forego them. Lastly, the introduction of green taxes with incentives for producers and consumers to orient themselves towards goods with the lowest ecological impacts in no way jeopardises the adoption of resulting innovations and future economic dynamics.

4.6 The will to change society

Moreover, all these claims by workers were accompanied by the will to change society more or less radically. The rise of capitalism, along with growing social inequality, job insecurity and above all the state of subordination in which the working population found itself, fuelled intense ideological ebullition throughout the 19th century, whose aim was to emancipate and protect workers.[78] The expression of this will ranged from anarchism to socialism, with its different forms and variants, via the neocorporatism of the conservative branch of Catholic socialism, the cooperative movement, friendly societies, community action and the like. All these currents and doctrines aimed at solving the "Social Question": some went so far as to call into question the right to private property; others set up, under the aegis of the State, corrective actions intended to protect workers. As already mentioned in the General Introduction, none of this can be considered ordinary for a market.

5 Public intervention on the market

Intervention on the labour market by public authorities, by which they fix a framework for regulating the wage relationship, is very ancient, so ancient in fact that it can be considered the rule throughout history.[79]

Many rules dating back to antiquity concern wage labour. Even the Code of Hammurabi (ca. 1700 BC) includes wage rates! On the other hand, no rates can be found for goods. One may well ask why this exception exists. In the case of France, *in the Middle Ages, almost everywhere the duration of daily labour was fixed by rules, at least for workers paid for their time*.[80] Certainly, working time tended to get longer from the 14th century, mainly due to suppression of public holidays (very numerous in the Middle Ages for religious reasons), though without any contradiction to such regulation occurring before the great liberal principles promulgated by the French Revolution. Finally, the only period in which the contractual relationship between employer and employee was genuinely untrammelled from the legal standpoint was the first half of the 19th century; that is to say, from the Allarde law of 2–17 March 1791, which abrogated corporations, and the Le Chapelier law of 14–17 June 1791, which prohibited the reconstitution of any coalitions of professional interests, up to the law of 22 March 1841 regulating child labour and that of 2 March 1848 limiting working time for all adults.

5.1 The dawn of specific labour laws (before 1914)

5.1.1 The limitation of working time

Very early on, after the proclamation of the great liberal principles mentioned above, philanthropists, hygienists, moralists and a few enlightened industrialists, among others, concerned by the general interests of the nation, began focusing on the fate of children working in factories. They worked at such an early age and under such abominable conditions that they risked "endangering the existence of the race" – to use the language of the time. The rate of refusal of draftees from industrial regions was so high that it stirred concern in the circles responsible for defending the nation!

This new awareness, illustrated in 1840 by the famous report of Doctor Villermé, resulted in a law (22 March 1841) regulating child labour in France in workshops with more than 20 workers. It banned children under the age of 8 from work and limited working time to 8 hours a day for those aged 8 to 12 and to 12 hours a day for those from 12 to 16 years old. This was the *first historical infringement*[81] placed on totally unbridled economic orthodoxy. In the United Kingdom, the leading industrial nation of the time, three laws having the same object were promulgated, in 1802, 1819 and 1833. The law of 1833 introduced factory inspections that enforced the application of standards more efficiently than its French counterpart. In both countries, certain persons proposed

extending the limitation of working time to all adults, at least to women, but without success. Such limitation could only be conceived for children in a situation of inferiority due to their age; for adults, who were assumed to act according to their free will, individual freedom to enter into contract remained the rule.

Nonetheless, the 1840s saw the development of the Chartist movement in the United Kingdom.[82] This movement campaigned for universal suffrage at a time when rivalry between the landed gentry and the industrial middle classes was reaching a peak in Parliament, two events that would serve the purposes of the workers. In 1844, a law brought the working day for women into line with that for adolescents (13–18 years-old), promulgated by the law of 1833, that is, 12 hours. Then, in 1847, when the Labour Movement's campaign in favour of the 10-hour day was in full swing, after the abolition in 1846 of the Corn Laws, which protected the interests of landowners, this group took its revenge on the free-trading middle classes by supporting the adoption of the 10-hour day for women and adolescents. Lastly, in 1850 work ceased at the beginning of the afternoon on Saturdays for the same category of workers, creating what in France was called the "English week". This became the goal of future claims by workers on the continent. This law was reinforced in 1853, by the establishment of legal opening times for factories. Since work done by male adults often required the help of children, adolescents and women, the 10-hour day over five and half days tended to become the accepted duration. In 1878, a bill made it effective for all adult workers. Earlier, in 1870, four additional holidays were accorded.

France was to follow this movement but far more slowly. After the revolution of February 1848 restored the Republic, the provisional government proclaimed *the right to work* immediately upon convening. Then, in the days that followed, as it established universal suffrage, it issued a decree (2 March) to limit the working day for all adults in Paris to 10 hours and to 11 hours in the provinces. The urgency with which this measure was adopted and its concomitance with the great democratic principles proclaimed by the revolution clearly highlighted the importance with which the "Social Question" was regarded. However, following the victory of the moderate Republicans and Conservatives in the legislative elections of April and the crushing of the workers' revolt consequent to the dismantling of the National Workshops (set up to give work to the unemployed), the public authorities backpedalled. The law of 9 September restored the working day to 12 hours, and in 1851, various waivers were accorded so that even this limitation was

poorly enforced. It was then necessary to await the advent of the Third Republic for new measures limiting working time to be put in force. First of all, the legislation adopted in 1841 regulating child labour was amended by the law of 19 May 1874. On this occasion a corps of labour inspectors was set up to control the application of the laws in companies. On 2 November 1892, greater protection was accorded to children (to take into account laws named after Jules Ferry, making education compulsory and free from 6 to 13 years of age), and legislation gave even greater power to labour inspectors, with the working hours of women and young persons from 16 to 18 years of age being limited to 11 hours a day. The so-called Millerand law, voted on 30 March 1900, set the daily duration of work at 11 hours for all adults and provided for a progressive reduction to 10 hours a day in four years. Lastly, an obligatory weekly rest period was accorded on 13 July 1906.

5.1.2 From civil equality to the right of coalition

In France, discrimination aimed at preventing workers from enjoying civil rights was progressively eliminated during the 19th century. Thus the "livret ouvrier" (worker's logbook), abolished in 1791 and then restored under the consulate in 1803, fell into abandon under the Restoration and the July Monarchy. Napoleon III restored it again in 1854, but it was little used. Finally, it was officially abolished in 1890. The well-known article 1781 of the Civil Code, proclaiming that an employer always spoke the truth, was abrogated in 1869. Workers were represented in labour tribunals from 1848 onwards, though the ban on coalitions was raised belatedly. Though the law of 25 May 1864 declared strikes no longer an imprisonable offence, they represented a breach of contract liable to justify the dismissal of the striking worker. As for the right of association, labour unions had to wait until the law of 21 March 1884 to obtain the right to exist as official bodies, although they had been tolerated at arm's length up to then. Though not particularly ambitious, these decisions were groundbreaking. The conservative State implicitly conceded that the labour market was unlike any other since it accepted that employees could join together to form a monopoly.

In the United Kingdom, the Combination Acts of 1799 and 1800, like the Le Chapelier law in France, which prohibited coalitions and associations aimed at raising wages, were abrogated as early as 1824/5, following the Peterloo massacre (1819). Afterwards, the British Labour Movement developed vigorously, though subject to ups and downs. The discriminations of the "master and servant" law disappeared in 1874.

In contrast, in Germany, Trade Unions were given recognition at about the same time as in France. The USA, which *has had the bloodiest and most violent labor history of any industrial nation*,[83] was a different case. Labour unions were formed very early on after the Declaration of Independence (in 1776), but although never formally forbidden, their methods (strikes, boycotts, etc.) were for a long time condemned in the courts under the dual pressure of employers and the political and judicial authorities. It was not until the beginning of the 20th century that it started to benefit from the more clement appreciations of Presidents Theodore Roosevelt and Thomas Woodrow Wilson. Hence the Clayton law, voted in 1914, allowed union members to militate without falling within the scope of the antitrust laws.

5.1.3 The State intervenes at last but with shortcomings

Thus, at the dawn of World War I, the principle of State intervention on the labour market had imposed itself in most industrialised countries. Three factors contributed to this new situation: (1) the greater strength of the labour movement in pressing its claims; (2) the progression of democracy with the introduction of universal suffrage, which allowed the political parties espousing the hopes of the labour movement to gain power; (3) technical progress and the increased labour productivity that resulted from it, which gave employers the capacity to satisfy workers' claims. Consequently,

> [t]owards the end of the 19th century, the principle of State intervention became the rule in nearly every industrialised country, and the legal protection of workers made considerable progress. Legislation varied from one country to another. Very advanced in Australia and New Zealand, it was solidly entrenched in the United Kingdom and Germany, where workers drew their strength from their numbers; then came France and the United States. However, legislation was mediocre in Belgium and almost inexistent in Russia and Japan.[84]

Yet the mere acceptance of State intervention – manifested in France by the drafting of the Labour Code in 1910 – should not mask a situation with many shortcomings.

> Genuine improvements have been made over half a century, but the subordination of the worker to the company remains, since the legal basis of the labour relationship, the individual contract with the employer, continues to place the worker in a situation of inferiority before their employer.[85]

5.2 From the State as "simple arbiter" to the State as "orchestrator" (after 1914)

5.2.1 From the goal of reducing working time to the establishment of a minimum wage

After World War I, the Labour Movement could contend to have satisfied an old claim made for over fifty years in some countries: the 8-hour day.[86] This measure was adopted by the new International Labour Organisation (ILO), established by the Treaty of Versailles (1919), though its foundations dated back to 1900. The Russian Revolution and the fears of contagion it stirred led most industrialised countries to ratify this limitation of working time. In France, this was done with the law of 23 April 1919.

The ILO's recommendation in 1935 to reduce the working week to 40 hours met with less success. Under the Popular Front in France, it was applied to the letter in 1936. Nonetheless, two decrees, the first in November 1938 and another in March 1939, effectively signalled its abrogation. The 40-hour week was finally re-established in February 1946 with more flexible rules of application than in 1936.[87] What is more, a "guaranteed interprofessional minimum wage" (the French acronym is SMIG) was introduced in 1950 and then transformed in 1969 into a minimum "growth" wage (SMIC), that is to say, indexed against inflation and gains in productivity in the economy.

The slow-growth of the 1980s and 1990s led to a new reduction of working time in Europe according to conditions that differed from country to country. In France, the legal working week was reduced in 1982 to 39 hours, that is, a figure very slightly less than the effective working time. Then, in 2000, it was lowered to 35 hours. At the same time, the annual working time was cut by the extension of paid holidays. Following the introduction of the first paid holidays (two weeks) in 1936, they were increased successively to 3 weeks in 1956, 4 in 1969 and 5 in 1982. Holidays in most developed European countries now last from 4 to 6 weeks.

With Franklin Delano Roosevelt as its President, the United States also reduced the working week to 40 hours in 1938 as part of the Fair Labor Standards Act. Above this threshold, hours worked overtime were paid an extra 50% (i.e. twice as high as the rate paid in France since 1936).[88] In addition, children under 16 years of age were forbidden from working, and a minimum wage was introduced. The legal working time in the USA since these changes in 1938 has remained the same, given that paid holidays do not fall within the scope of federal law but are subject to

collective bargaining (the practice of which has greatly declined since the 1980s). Moreover, the United States is one of the developed countries where working time is the longest after having been one of the shortest for the century up to the 1980s.[89]

5.2.2 The decisive recognition given to collective bargaining

The most important, though by no means the most spectacular, legislative measures were those that favoured collective bargaining. They made it possible to compensate the state of inferiority of one of the contractors vis-à-vis the other, in this case that of the employee faced by the employer.

The United Kingdom introduced extensive legislation on working time in the 19th century, far more than did France, and it also opened the door to collective bargaining, and changes in working conditions were mainly brought about afterwards within the framework of dialogue. We saw previously that the UK lifted the ban on the right to form unions and associations very early on. Thus trades union – mainly reformist in nature – were able to become much stronger and wield greater power in negotiations with employers (in 1913, the proportion of union membership was 3.5 times higher in the UK than in France).

In France, the law of 25 March 1919 gave a legal value to collective agreements, but they only concerned the employer and employee signatories of the agreements reached. The law of 24 June 1936 introduced union representatives at the same time as considerably strengthening collective bargaining and contributing to its general application. Indeed, the conventions reached by the most representative trade unions of a professional branch can be extended to the entire profession by Ministerial decree, including non-signatory employers and employees. In addition, the law demands that a certain number of conditions must be specified in these conventions.

After World War II, this form of negotiation governing wages, working time, working conditions and so forth became generalised in France with the law of 11 February 1950. The government can even extend the convention of one branch to another that did not sign a convention owing to the failure of the social partners to reach agreement. (In 2011, 90% of French employees benefited from a collective agreement, one of the highest rates in the world). The same situation can be found, more or less, in most industrialised countries. Thus, in the USA, the Norris-La Guardia law of 1932, and the Wagner law of 1935 – under the Presidency of Franklin D. Roosevelt, elected with the support of the unions – considerably strengthened their role.

Following the birth of a new, more dynamic and pugnacious trade union organisation and the very violent strikes in 1937, *collective bargaining became the pivot around which the entire American Trade Union movement organised its actions*.[90]

5.2.3 Recognition of the major principles

By extending recognition of collective bargaining, striking became legal in France, a right included in the preamble of the Constitution of 1946 and carried over into that of 1958. It was therefore no longer regarded as a breach of contract justifying dismissal. Once again, most industrialised countries recognised this right, although it can be restricted in certain sectors, such as public services. However, this right appeared to be under attack in some countries at the end of the 20th century.

Acknowledging the limits of liberal individualism, the Universal Declaration of Human Rights, adopted by the United Nations in 1948, henceforth encompassed "social rights" for human beings, especially regarding social security and employment security. As for the ILO, at the Philadelphia Conference in 1944, it asserted that *labour is not a good*[91] in its first principle even more radically than when it was founded in 1919. Here, then, was a decision taken by the oldest of the specialised institutional members of the United Nations, which could only leave an economist profoundly bewildered. Nowadays, such a declaration appears surrealistic!

5.2.4 Strong imbrications between legal and contractual procedures

The authors of the *Histoire générale du travail* terminated their study of State intervention on the labour market by observing:

> Before World War II, the legal channel and the contractual channel formed two clearly distinct means of limiting arbitrary action by employers, and France and the United Kingdom were quickly chosen as examples in which one or the other of these two routes predominated.[92] [However, after the Great War,] it became increasingly difficult to place contractual agreements in opposition with legislation. The State intervened more and more in contractual settlements, no longer encouraging from the sidelines but sometimes entering into agreements as a third party.[93]

The accession to power of political parties buoyed by the aspirations of the working classes in most industrial countries during the Great Depression of the 1930s and at the end of World War II, contributed to

granting wider guarantees to employees and, above all, to strengthening their power of negotiation. What is more,

> the complex mixture of legal and contractual procedures made it difficult to determine to what extent which of these procedures made the most progress in comparison to the pre-war period. What is sure is that the unilateral determination of working conditions by employers had waned, especially regarding the most basic issues, the economic ones.[94]

However, the failure of Keynesian policies to stem rising unemployment in the last quarter of the 20th century brought a powerful resurgence of neoconservative economic thinking with, for example, the supply-side doctrine. Conservative governments emerged simultaneously and undertook to reduce the power of the Trade Unions and render labour law more flexible, with repercussions on the labour market, as in the United Kingdom and the United States from the 1980s onwards. This often resulted in the decline of collective bargaining and increased disparities in income.

5.3 Regulations governing working time today in France

On the legal level, the situation was perfectly clear: the prerogative of determining working time belonged to employers, not employees.

> Since long ago, the question of working time falls under the competency of the employer. … Excluding exceptions, the decision linked to time and the organisation of work, must be respected by the employees who cannot dispute possible changes justified by considerations of good management. As recalled invariably by the Supreme Court of Appeal, the employer remains the master of the "clock".[95]

Thus the employee is bound to work for the time required by the employer up to the legal limit. Let us take a quick look at the judicial conditions on which employers base their decision.

5.3.1 Part-time work

In France, according to the INSEE (the French National Office of Statistics and Economic), 17.6% of employees worked part-time in 2008.[96] This figure is lower than the European average. Part-time work has developed above all in northern Europe, with the Netherlands holding the record (between 40% and 50% according to source). As in most European

countries, part-time work mostly concerns women, poorly qualified persons and employees working in the service sector.

Part-time work covers two contradictory realities:

- Part-time employment from *choice*, matching the employee's desire to reduce their working time;
- Part-time employment through *constraint*: the employee has no other choice since they cannot find a full-time job (the case of almost one-third of French employees in 2008).

According to the law, part-time work can be done at the initiative of either the employer or the employee.

The employer is free to hire in the framework of part-time employment contracts. They can also ask employees working full-time to change to part-time. Since this amounts to a modification of the employment contract, employees can refuse. If so, they run the risk of being dismissed by the employer though only for economic reasons (they must abide by the legal procedures provided for this situation). There is no minimum duration for a part-time contract, but it generally stipulates the possibility of working overtime on top of the basic duration, provided that it does not exceed 10% of this duration (30% in the case of a collective branch or company agreement). This overtime does not give rise to any increment on the basic wage (contrary to overtime paid to full-time employees).

Employees are free to ask to work part-time. The employer can refuse the request (unless in the case of a birth or adoption), but such refusal must be justified.

5.3.2 Overtime

The volume of hours worked overtime, that is, over the legal working time of 35 hours a week, is regulated.[97] Without dwelling on this aspect of regulation, let us simply recall the principles.

Employees cannot refuse to work the overtime the employer decides to assign them

- if it falls within the legal (or contractual) quota accorded to them and after having informed the Labour Inspector and informed and consulted with the employees' representatives;
- or if, beyond the legal quota, such overtime is authorised by the Labour Inspectorate, after listening to employees' representatives.

Any refusal is considered a fault justifying a sanction or even dismissal without prior notice.

Since the laws establishing the 35-hour week, the quota of legal overtime per employee has been raised several times. In 2011, it was 220 hours a year.

This brief overview of the legal conditions setting working time clearly shows that, in this area, employers impose their will (see Table 1.2). In theory, their margin of freedom can range from 0 to 100% of the legal duration by calling on part-time work while remaining within the normal wage rate; then this margin can rise from 100% to about 113.7% of the legal working time by calling on hours worked overtime paid at 125% of the normal wage rate, that is, with an increment of 25%.

Table 1.2 Two centuries of workers' rights in France

1791	The Allarde Law abolished corporations (which had existed for seven centuries). The Le Chapelier Law prohibited any coalitions of workers (i.e. strikes and unions).
1841	Working time for children in factories with 20 employees or more was limited for the first time: work was banned for children under 8 years of age; working time was limited to 8 hours a day for children between 8 and 12 years of age and 12 hours a day between 12 and 16 years. The law was poorly enforced; light sentences for those who abused it.
1848	The working day was shortened, first to 10 hours in Paris and 11 hours in the provinces, after which working time was pushed back to 12 hours for all employees aged over 12.
1864	Strikes were no longer considered an imprisonable offence.
1874	The law governing child labour was reinforced. A corps of labour inspectors was set up.
1884	Trade unions were legalised.
1892	Regulations governing child labour and labour inspection were improved. Women's work was limited to 11 hours a day.
1898	The law on work accidents established the principle of the employer's responsibility (⇒ compulsory insurance).
1900	The 10-hour day was introduced (with application spread over 4 years).
1901	The law on the freedom of association was adopted.
1906	A weekly day of rest was introduced.
1919	Collective labour agreements were given legal recognition. The 8-hour day was introduced. The International Labour Organization (ILO) was founded.
1930	Obligatory national insurance (health, disability and old age) was introduced for employees.
1936	Collective agreements were signed by the most representative trades unions and could be extended to an entire branch by ministerial ruling. The 40-hour week and paid holidays (two weeks) were introduced; freedom was given to form unions.

Continued

Table 1.2 Continued

1945	The French social security system (welfare state) and works committees were established.
1946	Striking was recognised as a constitutional right (it was no longer a breach of contract justifying dismissal). Works doctors were appointed.
1948	The Universal Declaration of Human Rights recognised the "social rights" of individuals.
1950	In France, the minimum wage was introduced (guaranteed interprofessional minimum wage, or SMIG). Collective agreements could be extended to every branch of the economy.
1956	The third week of paid holiday was introduced.
1958	Unemployment benefit was established (substitute salary in case of loss of employment). Notice of one month was made obligatory in the case of dismissal.
1968	Union delegates and union branches in companies were recognised. The guaranteed minimum agricultural wage (SMAG) was aligned with SMIG.
1969	The fourth week of paid holidays was granted. SMIG became SMIC (for "Growth").
1982	The fifth week of paid holidays was granted. The working week was limited to 39 hours. Retirement age was lowered to 60. Lois Auroux reinforced the right of representation of employees in companies.
2000	The 35-hour week was introduced.

Conclusion: erroneous and fallacious reasoning?

For jurists and historians, the intrinsic inequality of the power relationship between employers and employees – in the absence of any corrective legislation – is glaringly obvious. Adam Smith himself acknowledged this inequality! This is also the reason why the legislature has renounced applying the main liberal principles to the labour market by recognising the right of coalition. Another reason why it has intervened in every developed country, either directly by establishing legal limits to working time or minimum wages or indirectly by attempting to strengthen the power of employees to ensure more balanced wage bargaining with employers. This public intervention was strengthened in particular following the Great Depression of 1929. However, since the beginning of the 1980s, we have witnessed the retreat of such intervention, initially in the United States and in the United Kingdom. Likewise, historians and jurists have clearly shown that, until efficient intervention by the State, to a great extent employers remained masters of working time and wage levels in their premises. Today labour law still leaves employers

considerable leeway to impose the working time that suits them, without it being necessary to modify wage rates simultaneously.

However, throughout the 19th century and the first half of the 20th century, when such State intervention remained relatively inefficient, the economy was rocked every eight to nine years on average by cyclic crises of overproduction (the so-called Juglar cycles). Once again, it has been clearly established that during the expansionary phases of these cycles, working time increased, and above all, the mass of profits increased more rapidly than did the payroll. However, the opposite was true during downturns: profits fell more than wage levels. As for the real hourly wage, this increased during downturns due to steep falls in consumer prices and often more so than during expansionary phases, despite increasing unemployment. This was also the case during periods when economic liberalism reigned almost absolutely: coalitions of workers and unions were illegal and State intervention was either non-existent or inefficient.

Historians and contemporary observers have shown that it is during the expansionary phases of these cycles that the labour movement organises offensive strikes to reduce working time in order to raise wages as well as to regulate fluctuations of economic activity: slowing the growth of profits to avoid a subsequent crisis of overproduction/underconsumption and then a depression. However, following the generalisation of collective wage bargaining during the second half of the 1930s, the claim relating to working time to increase wages tended to be replaced by a strategy aimed directly at indexing wages to gains in productivity. Lastly, historians and contemporary observers have established that the consensus to reduce working time to combat unemployment tended to culminate, for the workers, at the end of downturns of long fluctuations, known as Kondratieff waves, in the 1840s, 1880–1890, 1930 and 1980–1990 with campaigns in favour of the 10-hour day, the 8-hour day, the 40-hour week and, lastly, a new reduction of working time. Nonetheless, this claim rarely takes the form of strikes, even defensive ones, but rather campaigns to influence opinion: petitions, press articles and so forth.

In all, it is difficult to consider that the highly conflictual relations that have occurred between employers and employees over two centuries of recurrent claims made by the labour movement to increase wages and shorten working time, along with serious intervention by the governments of every industrialised country to progressively build labour law intended to make up for the shortcomings of common law contracts in order to protect workers, are merely the result of misguided and fallacious reasoning, as has been and is still thought by certain economists.

Obviously, one may object that part of the labour movement had long gone astray in believing that the communist countries were earthly paradises. However, a belief cannot be placed on the same level as claims formulated and implemented on an almost daily basis. Belief is possible as long as one has not experimented with a conviction oneself. But for two centuries, the labour movement has been able to experiment with its claims and has had ample time to appreciate the results. If they were really contrary to members' interests, they would have abandoned the demands long ago and changed direction, and the legislature would have done likewise.[98]

2
The Neoclassical Model of the Labour Market

Introduction

According to the basic neoclassical model, the determination of the level of employment and the unit price of labour is dealt with as belonging to a perfectly competitive market, comparable to that of a consumer good. The only difference is that the roles of the agents are reversed. On the one hand, companies are suppliers on the market for goods and demanders on the labour market. On the other hand, households[1] are demanders on the market for goods and suppliers (of their productive services) on the labour market. The wage rate (or equivalently, the unit wage; still more concretely, the hourly wage) and the volume of labour (the number of people employed multiplied by the duration of their work done at a given intensity, or work rates) result in the free confrontation of the global supply of, and demand for, labour. This confrontation is schematised in the form of a Saint Andrew's cross on a plane where the horizontal axis measures the volume of work in hours while the vertical axis measures the wage rate. Each segment of the cross expresses the relation established between the volume of labour demanded or supplied and the wage rate (see Figure 2.1).

This Saint Andrew's cross – common to all representations of competitive markets – is the basic scheme of the neoclassical construction. This scheme is based on a large number of hypotheses, one of which is so implicit that it is not even mentioned in microeconomic manuals as being one of the conditions that define pure and perfect competition. The segments of the cross (in reality, curves) express the fact that demanders and suppliers *optimise their choices* and thus are *perfectly free and of independent will*.

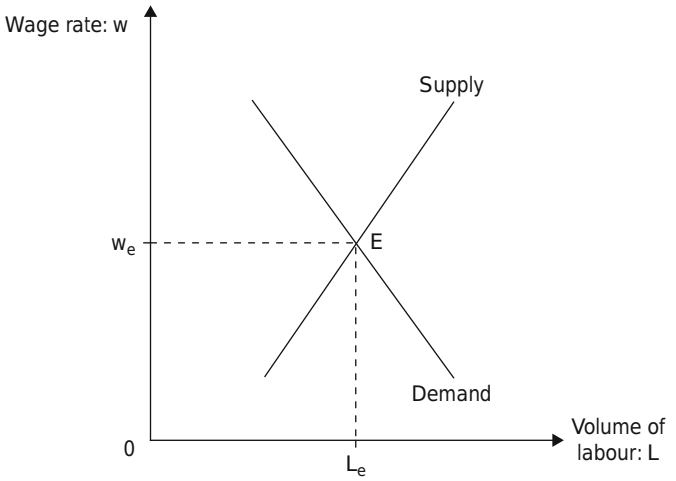

Figure 2.1 The basic neoclassical representation of the labour market

In this basic model, labour is considered perfectly homogeneous: all workers have the same productivity. This simplification will be conserved throughout this book, except for a few indicated exceptions.

Let us examine successively how this global supply and demand for labour is determined.

1 The theory of labour supply

1.1 The hypothesis of optimal choice

1.1.1 The equalisation of the marginal utility and disutility of labour

Individual supply, that is to say, the number of hours of work that a household is ready to supply for a given wage rate, corresponds to the optimised use of its time. It will work until the marginal utility of its labour tends to be exceeded by its marginal disutility, meaning that until the utility, in terms of income and other rewards, of an extra hour of work becomes lower than its cost in terms of additional fatigue, rest and missed leisure time (see Figure 2.2).

Intuitively, it becomes obvious that the first hours of work are of great use for a household, especially if they have no income other than that earned from work, since they allow it to satisfy its most pressing needs. However, as the hours of work increase and the most vital needs are satisfied (by the income acquired), the additional utility of each new hour of

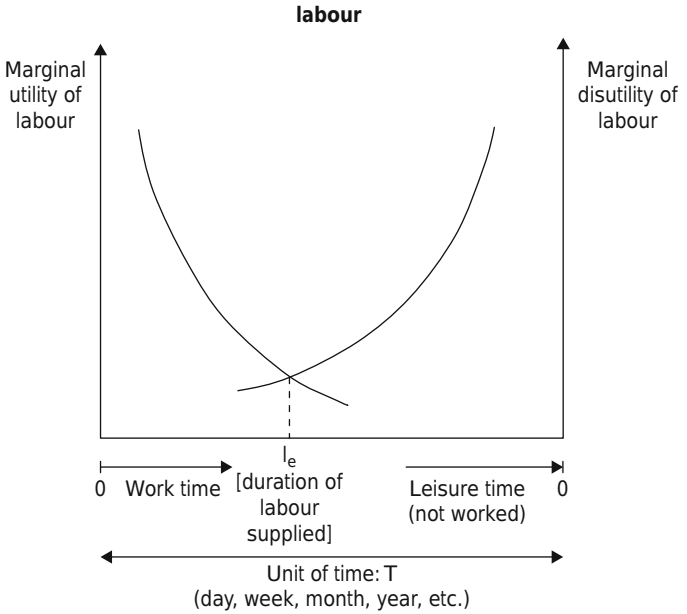

Figure 2.2 The equalisation between the marginal utility and disutility of labour

Note: This figure differs in form but not in substance from that of Jevons. Cf. Blaug, M., *Economic Theory in Retrospect*, 5th ed., Cambridge Univ. Press, 1997, 298.

work decreases. Simultaneously, as the work time accumulates, the greater the disutility – the cost – of each additional hour. A rational household will continue to work as long as the additional utility of each hour of work remains higher than its disutility, and when parity is reached, it will stop working. That being said, these functions of utility and disutility are influenced by a large number of parameters. In particular, that of work depends on the rate of remuneration, the non-monetary satisfaction that the work may provide, the utility of the income itself in terms of additional goods and the additional savings that can be acquired (and thus the assets already owned). The function of disutility depends on its difficulty and the opportunity cost of the utility of the free time sacrificed (and thus the existing chances of profiting from leisure time).

This theory of individual labour supply, developed in 1872 by William Stanley Jevons, is currently presented as a specific case of application of the theory of consumer choice with the use of indifference curves, providing the labour/leisure trade-off model.

1.1.2. The labour/leisure trade-off model

The stake for the household is to realise a trade-off between two goods: leisure (taken as free time) and income (generated from work). The only difference with the general trade-off model is that the quantity of one of the goods, leisure, is not unlimited but is bounded by the unit of time the household intends for its use. It is impossible to have more than 24 hours of leisure (non-work) a day, more than 7 days a week or even more than 365 days a year! So the household is assumed to maximise the utility of its time between income and leisure, taking into account the wage rate of its working time (for the sake of simplicity, we assume this labour is salaried).

Figure 2.3 shows the indifference map of a household expressing its preferences between two goods: income (earned by working) and leisure (time not worked). Each indifference curve expresses the combinations of income and leisure for which this household is indifferent, in that they provide it with the same level of utility. According to the usual hypotheses of the theory of consumer choice, these indifference curves are downwards sloping, non-intersecting and convex and correspond to increasing levels of utility when moving towards the top left in Figure 2.3.

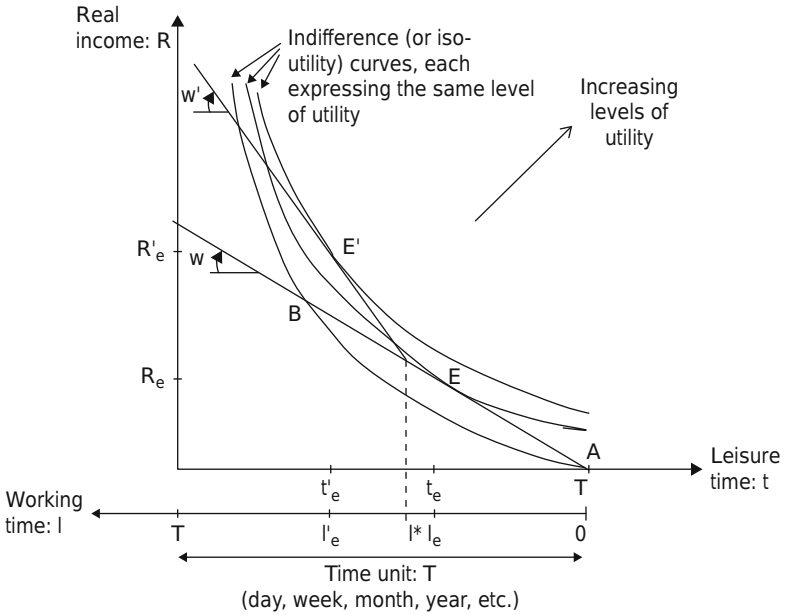

Figure 2.3 The trade-off between labour and leisure

The following notation is used: time unit: T; leisure time: t; labour: $l = T - t$; real wage rate: w; and income: $R = w \cdot l$.

The aim of the household is therefore to maximise its utility, U (R, t), between income, R, and leisure, t, under the constraint $R \leq w \cdot l$, or else: $R \leq w(T - t)$. This constraint expresses the relation between income, R, and work time (taken from leisure time), $l = T - t$, taking into account the real wage rate, w. Everything occurs as if to acquire a certain real income, the household works to purchase a certain leisure time whose price (or opportunity cost) is equal to the real wage rate.

Graphically, the household will maximise its utility at point E, where this right angle that determines its income becomes tangent to the indifference curve. The optimal combination obtained will be leisure time, t_e, for income, R_e (linked to work time $l_e = T - t_e$). Any other point of contact with the other indifference curves can provide only a lower level of utility. Any other indifference curve of utility higher than the tangent curve cannot be reached since it exceeds the level of income that can be obtained, given the real wage rate, w.

We can introduce a legal working time into this graph, $l^* = T - t^*$, beyond which the rate of remuneration of overtime is incremented: w'. The linear function of income therefore slopes steeply, from coefficient w' beyond this legal duration, and allows reaching an indifference curve of higher utility at tangential point E'. The optimal combination therefore becomes reduced leisure time ($t'_e < t_e$), increased work time ($l'_e > l_e$), and, lastly, higher income ($R'_e > R_e$).

We can also introduce non-labour income, R_o. In this case, the linear function of income, $R = w\ (T - t)$, is translated vertically from the amount of this income, R_o, and a new optimum is found on the indifference curve of higher utility. However, since this case is not essential to the discussion of the first hypothesis presented earlier in the General Introduction, it has not been included in Figure 2.3.

Critical comment If workers were able to spontaneously optimise their choices regarding their supply of labour – as was shown above – it would be impossible to understand why the labour market has been so historically conflictual (and more besides). In particular, it is difficult to understand why, for two centuries, workers have repeatedly claimed first the limitation and then the reduction of working time and why legislation has been introduced for this reason.

It was seen earlier (cf. Ch. 1, §5.3.) that employers have the legal right to set the duration of working time and enjoy a relatively wide margin that can increase (overtime) or decrease (part-time work) in comparison

to the legal duration. In addition, they are not bound to modify wage rates (normal rate and incremented rate). Within this framework, the duration set by the employer constitutes a legal obligation for the employee from which they cannot stray without risking sanctions or even dismissal. In short, it is the employer who decides the number of hours to be worked overtime and not the employee; likewise, the employee can ask for permission to work part-time, but it is the employer who decides in the end. Then we must not forget the work rates that an employer can impose on employees and so forth.

On the contrary, this theoretical construction appears pertinent for describing the working behaviour of *workers on their own account*. Indeed, the latter have never claimed a reduction of their working time as they are free to choose, nor are they concerned by labour law. This is also the case for *domestic work done by the members of households* at home.

1.2 The individual labour supply curve

The curve shown in Figure 2.4 expresses the optimal duration (or volume) of labour supplied by a household as a function of the real wage rate accorded to it.

Its shape is a priori indeterminate as two conflicting phenomena are involved. Indeed, an increase in the wage rate results in making leisure time more "costly": the wage foregone by not working – thus by taking leisure time – increases. Also, when the price of a good rises,

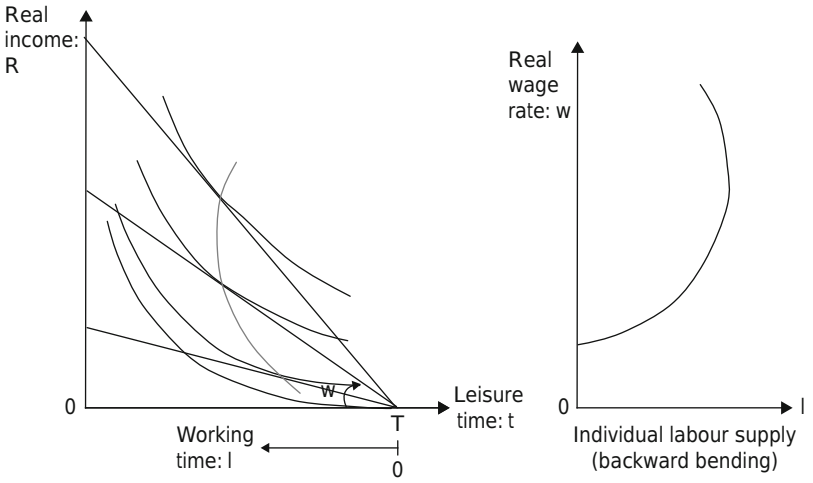

Figure 2.4 The determination of the individual labour supply curve

the quantities demanded fall, all other things being equal. This is what is called the "substitution effect". However, things do not stay equal, since increasing the wage rate leads to higher income, which permits "purchasing" more leisure time – the "income effect". A priori, it is not possible to know which of these two effects wins against the other and thus what the global result will be. It depends on the shape of the indifference curves, meaning the preferences of each household.

Nonetheless, on the basis of experimental studies, many economists consider that this individual labour supply curve increases up to a certain point: the volume of labour increases with its rate of remuneration, then decreases after reaching a given level. Although it fails to provide absolute certainty, the advantage of this curve is that it more or less represents labour supply as being like any other supply of goods.

The shape of this individual labour supply curve has been the subject of debate through history and still remains controversial. Whatever the case, we shall leave this question since a radically different point of view will be defended further on (Ch. 3). Indeed, the asymmetry of power between employers and employees results, on the one hand, in the latter being unable to spontaneously optimise their choices while, on the other, the former enjoys a relatively wide margin of freedom to influence the volume of labour supplied by employees (and thus their labour supply).

1.3 The interpretation of the historical evolution of working time

The historical evolution of working time is founded on this theoretical basis. Figure 2.5 is taken from the work of Pierre Cahuc and André Zylberberg,[2] who used the works of Olivier Marchand and Claude Thelot. The increase in working time in the first half of the 19th century, followed by its decrease, is explained as follows:

> The substitution effect was probably prevalent for a few years during the economic take-off, as rural workers abandoned the countryside and went into the factories. But the number of hours worked rose so quickly, along with some growth in labor productivity, that the global income effect came to prevail.[3]

Critical comment At first sight, this very common interpretation appears to contradict the also very common viewpoint – presented in the previous paragraph – of an upwards sloping individual labour supply curve. Indeed, if since 1840, the income effect has prevailed over the substitution effect,

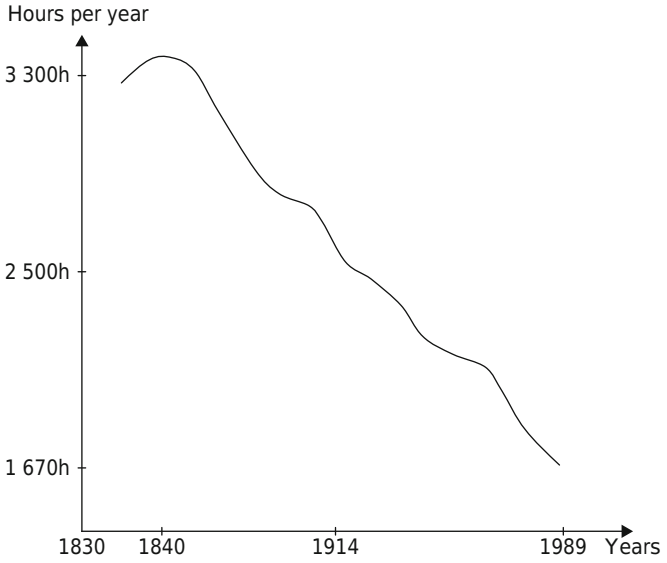

Figure 2.5 The evolution of annual working time in industry in France

Cf. Cahuc, P., and Zylberberg, A., *Économie du travail*, ed. De Boeck Université, Brussels, 1996, 42.

the slope of the individual labour supply curve should henceforth be completely downwards.[4] Real unit wages are now far higher than they were in 1840, the date when the income effect is assumed to have gained the upper hand. Obviously, one would be right in objecting that this supply curve has been determined within a given technological context, all other things being equal. However, things have changed radically since 1840. For all that, if the sole effect of technological change were to increase the productivity of factors and thus raise unit incomes (including the wage rate), the contradiction remains nonetheless. To lift this objection, technological change must have effects other than on unit incomes. Indeed, this is one of the reasons why, further on (Ch. 4), we develop the highly specific role played by technical progress in economic dynamics, through the innovations it generates in consumer goods.

That being said, the historical evolution of salaried labour has been far more irregular than what Figure 2.5 would have us believe. As seen earlier (Figure 1.1, Ch. 1), the main decrease in this duration occurred between 1880 and the eve of World War II, a period when gains in productivity were shared more or less equally between wage increases and reductions of working time. However, and above all, it was seen

that this effective duration was prolonged for employees in the post-war period until the mid-1960s, when it culminated at 46 hours a week on average for all employees, in spite of a very substantial and unprecedented increase in labour productivity and wages rates. It was also in spite of the return in France, in February 1946, to the law on the 40-hour week introduced by the Front Populaire (1936). Further on (Ch. 4, §5), we shall examine the interpretation that can be given to this extension of working time that lasted from the end of World War II until 1965.

As for the extension of working time from the 18th century and the beginning of the 19th, it was seen that the three interpretations presented by historians (Ch. 1, §3.1.) differ considerably from that provided above by the neoclassical corpus. Historians impute this increase to the desire of employers to amortise within the shortest time their ever more costly investments by making their employees work as long as possible (thanks to the installation of artificial lighting). This interpretation stems directly from our first hypothesis given in the General Introduction, according to which the asymmetry of power predominating on the labour market is not autonomous but is subordinated to the demand of companies. The second interpretation, that the increase of the volume of labour supplied by families in the 18th century was intended to offset the reduction in real wages (due to higher food prices), meant that the income effect prevailed over the substitution effect. The labour supply curve therefore sloped downwards, at least for very low wage levels, to the extent that the very lives of individuals were at risk.[5] We shall see (Ch. 4) that a decreasing labour supply curve can be considered if there is no longer any innovation in consumer goods being sold to households (such that consumption serves only to renew what has worn out). Lastly, the third interpretation, developed by Jan De Vries, according to which innovations, inventions and discoveries of new consumer goods would have stimulated the desire of households to consume and thus led them to work more to increase their incomes, coincides directly with our second hypothesis (see the General Introduction). We shall see further on (Ch. 3, §§3–4; Ch. 4, §5) that these interpretations, especially the first and third, do not necessarily contradict each other but can be merged, one over the short or medium run, the other over the long-run.

1.4 Global labour supply on the market

The global labour supply on the market corresponds to a simple additive aggregation of the individual labour supplies of households.

2 The theory of labour demand

2.1 Labour demand of a competing company

The individual labour demand of a competing company corresponds to the curve of the value of marginal product of labour within the company. This marginal product is downwards sloping, at least beyond a certain volume of labour employed in both the short and long runs. Indeed, in the short run, when the number of units of labour increases while other factors (such as capital) remain fixed, this results in what is called the law of diminishing returns (to scale). The company's production increases but more and more slowly above a given level of utilisation of the variable factor, since the fixed factors become limiting. Therefore there is a decrease in additional production (marginal product). Likewise, in the long term, when all the factors of production of the company (labour, capital, etc.) increase above a given optimal size (in terms of the quantity of factors utilised), a phenomenon of decreasing output to scale usually occurs: production increases less and less quickly and the marginal product of each of the factors decreases. If this phenomenon did not occur, every company would gain by indefinitely expanding to the point where there would be only one company on the market, resulting in a monopoly, contrary to the hypothesis put forward here of perfectly competitive markets (with the exception of that of the labour market).

Consequently, a company will increase the quantity of factors of production engaged – for example, of labour – as long as the additional product generated by each additional unit of the factor remains higher than its cost. That is to say, as long as the marginal productivity in value is higher than the cost of the factor. Optimal employment is reached when the two values are equal. The company will not go beyond this point because the return on any additional factor of production will be lower than its cost.

We show more specifically that the labour demand curve of a company corresponds to the downwards sloping part of the curve of the value of its marginal product, below the value of its average product (or average added value).

2.1.1 The case where labour is the only variable factor

The curve of the value of marginal product is deduced on the basis of the production function upstream (see Figure 2.6). The latter is usually represented in the form of an S. (Initially, production is assumed to start slowly since the factor of labour is liable to be insufficient in quantity to

efficiently implement the fixed factors. However, this hypothesis is not essential, contrary to the law of diminishing returns).

Since the company is in a perfectly competitive environment, it is unable to influence the price at which its production is sold. We can obtain the value of the production function by multiplying the volumes of items produced by this sale price, as shown in Figure 2.6a. This allows deducing the curve of the value of the marginal product of labour, VMP, generated by the company from the use of each additional unit of labour. We can also deduce the value of the average product curve, VAP (Figure 2.6b).

For a given unit labour cost (wage rate), w*, the company will benefit from increasing the volume of labour hired as long as the value of the marginal product, VMP, remains higher than this price. The optimum is reached for a volume of labour L*, so that VMP = w*.

However, the labour demand curve is limited to the portion AB of the value of the marginal product curve. Indeed, if the unit cost of labour were

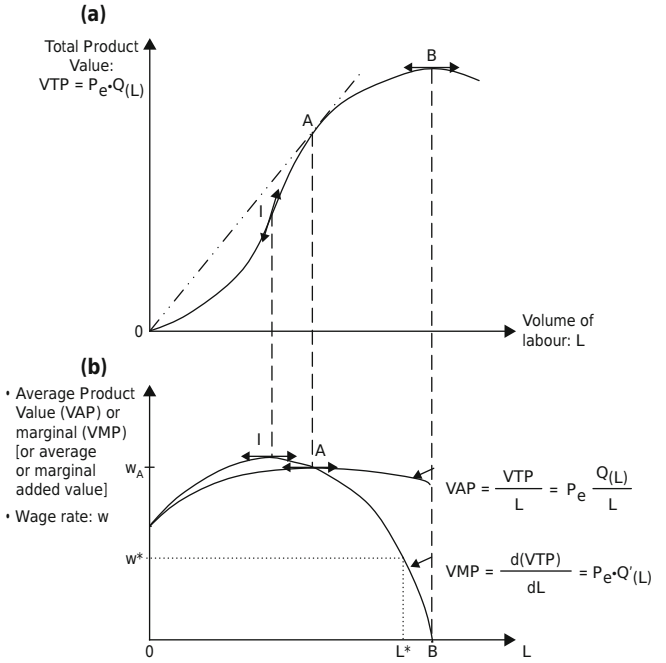

Figure 2.6 The determination of the labour demand curve (a)Value of total product (b) Value of average or marginal product

higher than the value of the average product, this would mean that the value of production obtained would not even cover the total cost of labour. By drawing an analogy with the theory of the offer of a commodity (which matches the theory of demand of a factor of production), point A can be considered the *shutdown point* (or *shutdown ceiling*) of labour demand.

Mathematically, these results are expressed as follows. The company seeks to employ a volume of labour in order to maximise its profits. This is equal to the total product value less the total cost:

$$\begin{array}{cccccccc} \prod & = & \text{VTP} & - & \text{TC} & & & \\ \prod & = & P_e \cdot Q(L) & - & w^* \cdot L & - & FC & \\ \text{(profit)} & & \text{(total product value)} & & \text{(variable cost linked to labour)} & & \text{(fixed cost)} & \end{array}$$

The price of product P_e and the wage rate w^* are the data (constants) since the company competes (with other companies) on the market for its product and labour.

- Condition of maximisation of the 1st order (to obtain an extremum):

$$\begin{array}{ccccccccc} \dfrac{d\prod}{dL} & = & 0 & = & P_e \cdot Q'_{(L)} & - & w^* & - & 0 \\ & \Rightarrow & & & P_e \cdot Q'_{(L)} & = & w^* & & \\ & & & & \text{marginal product value} & = & \text{wage rate} & & \end{array}$$

- Condition of maximisation of the 2nd order (so that the extremum is a maximum):

$$\frac{d^2\prod}{dL^2} < 0 \Rightarrow P_e \cdot Q''_{(L)} < 0$$

To maximise its profit, the company must employ a volume of labour such that it is equal to its marginal product value with the wage rate, provided that it is positioned on the downwards sloping curve of the marginal product value (when there is an S-shaped production function).

- However, these two conditions are not enough. The total product value must be higher than the variable cost of labour:

$$\begin{array}{ccc} \text{VTP} & \geq & \text{VC} \\ P_e \cdot Q_{(L)} & \geq & w^* \cdot L \\ P_e \cdot \dfrac{Q_{(L)}}{L} & \geq & w^* \\ \text{average product value, VAP} & \geq & \text{wage rate} \end{array}$$

Consequently, the wage rate must not be higher than the average product value, w_A, of labour, otherwise it will cost more than it yields. By analogy and by matching the theory of supply, this maximum admissible wage rate for the company is a *shutdown point* (or *shutdown ceiling*) for using the factor of production.

However, if the wage rate is equal to w_A, that is to say, it corresponds to the average productivity of labour, the company's sales will certainly cover all the variable costs of labour but not its fixed costs. In order for the company to avoid making a loss, the wage rate must not exceed a given level that is lower than w_A. In the next chapter, we shall examine more closely the problem raised by this fixed cost to determine the long-run labour demand. There is a strong likelihood, however, that we shall find the match between the break-even point and shutdown point apparent on the company's supply curve and its labour demand curve.

2.1.2 The case where labour is linked to other variable factors

Things become more complicated when a production process uses several variable factors. The demand curve of each factor differs from its marginal product value curve, despite the fact that the latter remains in the background. Indeed, the variable factors are interdependent in the production process (they can be both substituted for and complementary to each other), meaning that the variation of the price of one will lead to a variation of the rate of use of all the others. This brings about what are called substitution and output effects (or volume).[6]

Nonetheless, in the case of the factor of labour, a clever way of getting round this problem in a graph is to reason directly in terms of *added value* (total, average and marginal) instead of the value of total, average and marginal products. In this way, the substitution and output effects that can occur between labour and the other variable factors (intermediate consumptions) are so well integrated upstream in the production of added value that we need no longer worry about them. Since labour is the only variable factor producing added value, all that is necessary is to consider that the notions and value of the average and marginal product curves, mentioned previously, in reality represent average and marginal added values, respectively, so the reasoning developed previously remains unchanged.[7] Hence, if we continue along the same lines, the terms of value of marginal and average product will be used for marginal and average added value, respectively.

2.2 The global demand for labour on the market

In the case of a factor of production, in this case labour, the global demand for labour results from an aggregation process that is more

complex than a simple horizontal addition of individual labour curves.[8] However, this difficulty in no way presents an obstacle to the reasoning developed in the following chapters.

3 The equilibrium of the labour market, its modifications and distortions

By contrasting these labour supply and demand curves, as they have just been described, it is possible to determine the equilibrium between a wage rate and a volume of labour deemed optimal. For this wage rate, the quantities of labour demanded by companies are exactly equal to those offered by all individuals wishing to work (cf. Figure 2.1 at the beginning of this chapter). Under these conditions, there should be no involuntary unemployment.

Thus a contraction of global demand in consumer goods will impact labour demand, and a new balance will be found with a lower wage rate, which again equalises the quantities of labour supplied and demanded. The reverse occurs in the case of an extension of labour demand. For this, the labour market must remain perfectly competitive: there must be no barrier to prevent the adjustment between the quantities of labour supplied and demanded made possible by flexible wage rates. Figure 2.7, which can be found in most manuals on microeconomics and the economics of labour, illustrates this rebalancing mechanism on the labour market (with labour demand diminishing from D to D').

In this representation of how the labour market works, involuntary unemployment can only stem from exogenous influences that disturb and prevent wage rate flexibility and the equalisation of the quantities of labour supplied and demanded. In particular, two types of disturbance can be underlined:

- Unions, which, by demanding higher salaries (higher than the equilibrium wage rate, otherwise their action to obtain them would serve no purpose), or by opposing a reduction of the wage rate when the global demand for goods contracts, cause a distortion between the qualities supplied and demanded Thus, in Figure 2.7, if the unions impose maintaining the initial wage, w_e, following the reduction of labour demand from D to D', then unemployment corresponding to segment GE will occur.
- The State, by fixing a minimum wage or wages[9] (also higher than the equilibrium wage rate; otherwise this would serve no purpose either), will inevitably generate a certain level of unemployment corresponding to segment GH in Figure 2.8.[10]

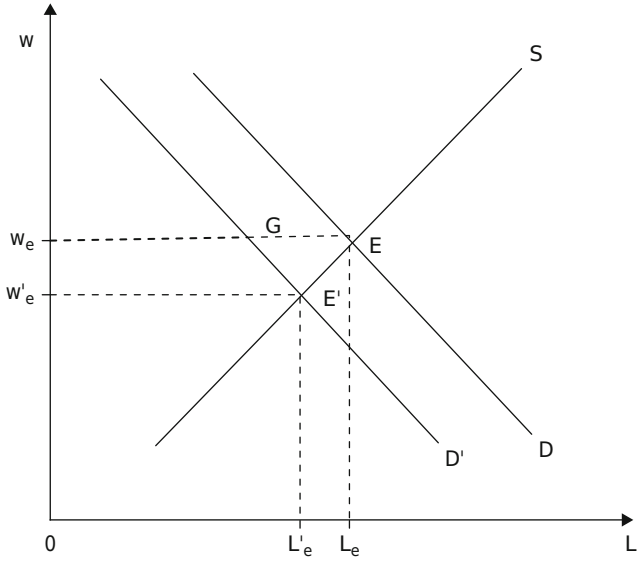

Figure 2.7 The supposed flexibility of the labour market

This is the theoretical representation underlying the policies of dismantling social legislation and reducing the "monopolistic power of the trade unions" implemented in the 1980s in the United Kingdom and in the United States by Margaret Thatcher and Ronald Reagan, respectively. Unemployment actually fell – despite controversy over the figures – but this was achieved in parallel with the indisputable aggravation of inequalities: a phenomenon that drew renewed attention from economists.

Critical comment The theoretical interpretation above cannot be defended in view of the facts. Indeed, how could workers have organised recurrent strikes for over two centuries to obtain wage increases while accepting that some of them would be unemployed at the expense of those whose claims were satisfied? How could the union movement have succeeded and survived up to now if it had been obliged to ensure unemployment for some in return for the wage increases obtained for others?[11] Likewise, how could the State have continued through history to build and then maintain the right to work if this right were to result in unemployment? This interpretation is not credible.

In reality, the trade union movement had never considered or thought that wage increases could lead to unemployment. In the case of a single

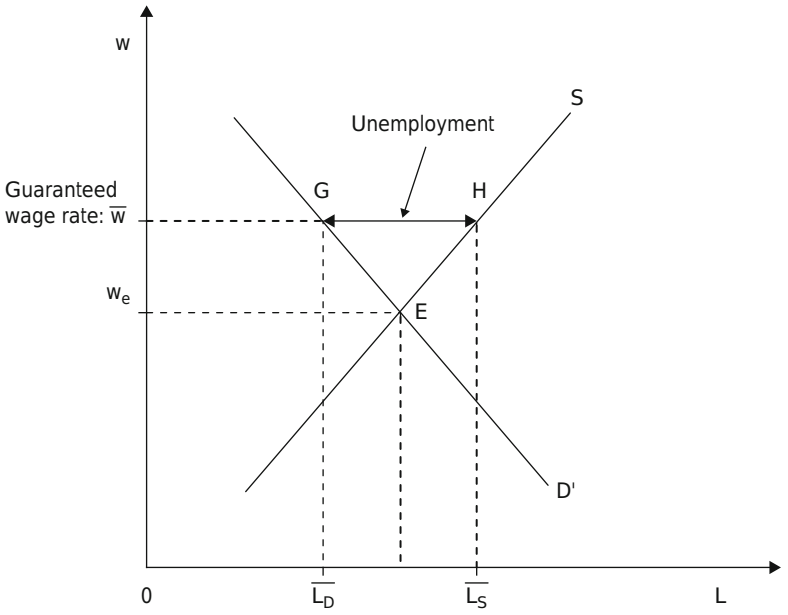

Figure 2.8 Wage rigidities and unemployment

company it was generally aware of the point to which it could go with its claims to avoid jeopardising the company's existence. As for collective bargaining by branch (or national bargaining regarding minimum wages), it has always assumed that wage increases could only be beneficial for global demand and therefore employment (or at least not be in contradiction with it). And when wage increases were seen to be excessive, they resulted in the generalised inflation of prices that were then corrected by monetary devaluations (e.g. in France, the substantial wage rises accorded in June 1936 and in May 1968).

On the contrary, as was seen in Chapter 1 (§4.3.), it also repeatedly claimed the reduction of working time for a social reason (to have more available free time) and above all for two economic reasons: to raise wages during the expansionary phases of Juglar cycles and to combat unemployment during phases of slow growth during the long Kondratieff waves, as labour productivity is thought to increase more rapidly than consumption. However, the contemporary theoretical corpus based on neoconservative doctrine and new theories take no account of this history of recurrent claims to reduce working time and State intervention to satisfy them.

As for "wage rigidities" in most developed countries, they were mainly introduced after World War II. On the one hand, the Great Depression of the 1930s had discredited liberal doctrine; on the other, the war economy and the post-war reconstruction of devastated regions placed the crucial role of the State at the forefront. In the case of France, the following facts should be borne in mind: the recognition of the right to strike in the preamble of the constitution of 1946, which was reinstated in that of 1958; the return of the 40-hour week from February 1946; the introduction of the guaranteed minimum wage (SMIG) in 1950; the generalisation of collective agreements to every branch of the economy over the two decades following the Liberation; the introduction of Social Security in 1945 with "social charges" tied to wages; the considerable rise in social security contributions, taxes, and public expenditure following the war; particularly strong and militant unions and a powerful Communist Party, etc.; not to speak of price controls that lasted until the end of the 1970s. In brief, quite the contrary of a flexible labour market and the recommendations announced since the 1980s by different economists. However, none of this hindered rapid national reconstruction or handicapped the exceptional growth of the Post-War Boom, during which unemployment remained extremely low.

Lastly, the hypothesis according to which the wage rate should fall when labour demands contracts during economic crises (cf. Figure 2.7) ran counter to what could be seen in reality. Indeed, as was seen earlier (Ch. 1, §2.1), historians have shown quite clearly that during so-called Juglar cycles, which occurred every 8–9 years in the 19th century, the real wage rate did not fall but rose and often rose even more during recession phases (in which economic activity contracted) than during expansionary ones. What is more, these wage increases occurred in a period during which liberal economics ran the roost, when unions were illegal and labour laws did not even exist.

4 The relaxation of the hypotheses underlying the basic neoclassical model

Naturally, economists are aware of the insufficiencies of the basic neoclassical model of the labour market. Since the founding work of John Thomas Dunlop in 1944 and above all after the failure of Keynesian policies to curb growing unemployment in the 1970s, new theoretical representations have been developed to explain the persistence of unemployment and render account of action by trade unions.

4.1 The different hypotheses brought into question

The new theoretical representations aim at loosening the rigidities in the main principles of the basic neoclassical model. We provide a brief presentation of them in what follows.

- Questioning the hypothesis of the atomicity[12] of actors has led to theories of monopsony and bilateral monopoly.

  Monopsony is a situation in a market in which a single buyer is faced with a larger number of suppliers. In the case of the labour market, this corresponds to the situation where a company is the only employer of a geographical area of employment. It influences wages through its demand for labour. To maximise its profits, it is in the interest of such a company to limit the quantity of labour mobilised to produce in order to lower the wage rate, thus it fixes a level of employment lower than that which would result from a situation of balanced competition. Monopsony is the only case recognised in neoclassical construction in which the action of unions and the introduction of a minimum wage can have a positive effect on both wages and on the volume of employment. However, it would be unrealistic to state that this situation is predominant in the economy and that labour unions find in it their sole justification.

  Bilateral monopoly is a situation on the market where a single buyer is faced by a single seller. In the case of the labour market, this corresponds to a syndicate of employers faced by a labour union exercising a monopoly on labour supply (thus on hiring recruits as in the closed shop system). In such a situation, the result of transactions between the two parties depends on the balance of power between them, thereby making the result uncertain. Whatever the case, this system has been rare in France, and it is generally forbidden elsewhere.
- The heterogeneity of the labour factor has been integrated in the theory of human capital (which takes into account the investment of workers in their vocational training). This heterogeneity has given rise to theories on imperfect matching (between the qualifications demanded by companies and those provided by workers), which permit explaining the paradox of unsatisfied job offers coexisting with unemployment.
- The theory of imperfect or asymmetric information has resulted in a vast amount of scientific literature with the job search theory (and reservation wages), the wage efficiency theory, implicit contract theories, and so on.

In the job search theory, the asymmetry of information disadvantages employees who know less than their employers about the state of the market and the wages associated with it. Seeking a job therefore generates certain costs (in time and money). Since employees estimate their own saleable value, they will continue to seek employment until they find jobs that correspond to their wage expectations (reservation wage). Thus the existence of voluntary unemployment can be explained by these costs paid by job seekers in their quest for employment.

In the efficiency wage theory, it is employers who are disadvantaged by a lack of information: they know less than the employees about their aptitudes ex ante and cannot constantly know or evaluate their level of effort. An employer may have to pay higher wages than that of the competitive equilibrium to attract the best workers, to limit turnover or obtain greater effort. These models can explain different aspects of wage policies and, in theory, the rigidity of real wages and involuntary unemployment. However, they are subject to lively debate: the carrot ("surplus wage") can be replaced by a stick – the threat of different sanctions – to obtain the same result.

In the implicit contract theory, the imperfection of information concerns the future economic situation. Contracts can include a guaranteed wage, which leads to a surplus wage in a phase of economic depression and "subwages" (wages below the equilibrium wage) in an expansion phase. This explains, without much difference with the basic neoclassical model, the occurrence of involuntary unemployment in depression phases. However, contracts can incorporate job security associated with wage adjustments or a guaranteed income linked to insurance deducted from the wage aimed at providing unemployment benefit during depression phases. These individual contracts can also be widened to a collective agreement. This theoretical approach makes it possible to take into account certain wage policies but not, effectively, the origin of unemployment.

- The theory of labour as an almost fixed factor of production calls into question the hypothesis of flexibility in the adjustment of supply and demand on the labour market.

  The cost of labour is not limited to the wages paid but also comprises the cost of recruitment, training and possible dismissal of employees. Thus companies can be led to forgo dismissing employees in the case of an economic downswing if the cost of dismissal is higher than that of paying wages. For the same reasons, companies can decide not to recruit in the case of an economic recovery. This theoretical approach

permits explaining short-term inertia on the labour market, though it fails to explain long term unemployment.

- The *insider/outsider* theory can be associated with the previous approach.

  Since the employees in place (insiders), know the cost for the company of turnover, recruitment and training new recruits, they demand higher wages from their employers than those that would result from competitive equilibrium. Thus the insiders prevent outsiders from gaining employment for a lower wage, which explains the persistence of a certain type of unemployment.

  The theories relating to the segmentation of the labour market belong to the previous approach. They oppose a primary market (with high wages, stable employment, career opportunities, etc.) and a secondary market (with the opposite characteristics). This duality may stem from the power of insiders or discriminative union power in a technological context in companies, leading to the differentiation of qualifications.

Indeed, these new approaches often combine several relaxations of hypotheses. They can also give rise to heterodox developments outside the perimeter of the neoclassical postulate of individual rationality and the approach of methodological individualism. We will not go further into this debate.

Critical comment These theories certainly allow taking into account certain quite subtle behaviours of actors on the labour market. However, they are unlikely to solve the major issues presented in the General Introduction of this work or the different critical comments expressed in this chapter. Most of these theories seek to explain unemployment by wage rigidity whose cause is endogenous to the labour market. However, we saw that even in the 19th century, when the characteristics of the labour market were closer to the ideal of the standard neoclassical model, the real wage rate increased during crises in parallel with an increase in unemployment. We will see further on (Ch. 3, §4.) that this paradox is perfectly explicable. Whatever the case, these new theories do not provide understanding of why unemployment varies through time. Why was it very low in most developed countries after World War II, why did it increase in the 1970s and why does it still stay high today? In brief, the explanatory capacity of these theories is very limited. This is also the opinion of most of the economists who have produced syntheses of these models.

4.2 Wage negotiation models

Carrying on from the works of John Thomas Dunlop, the neoclassical school has focused extensively on the economic analysis of labour unions and collective bargaining. Generally, a labour union is supposed to maximise for its members the objectives of wages and employment (working time being an exogenous institutional factor). The aim is to seek (negotiate) the optimal trade-off between wages and employment.

Critical comment This view does not match what has been seen in reality. As said above, historically, the Labour Movement has never considered that wage levels were in contradiction with employment and it should arbitrate between them. On the contrary, it has considered that the reduction of working time can lead to both wage increases and lower unemployment. It is these two aspects that we shall examine more specifically in the next two chapters. Nonetheless, it is most surprising that neoclassical (or marginalist) economists did not examine this direction, given the plethora of texts from the Labour Movement arguing in favour of reduced working time and given that labour demand is known to be inelastic.

Theoretical models also exist that aim at taking into account individual and collective wage negotiations, with or without the participation of unions. These models generally include situations of imperfect or asymmetrical information and different strategies deployed by the actors involved – described previously – which are dealt with using game theory. However, here again, working time is not included in the stakes of negotiations. Models can even refer to *workers' relations of subordination to employers* but, rather curiously (for jurists and historians), not at all to consider a situation in which employers are able to influence, in line with their interests and the degree of power they wield, the volume of labour supplied by employees – that is to say, a situation in which supply is subordinated to demand. In these models, the relation of subordination, whether or not the work supplied by employees can be verified.[13] This results in an oversimplification, since the verification of the work supplied is also performed by the client when receiving the service or merchandise purchased from a company (e.g. when a construction company performs work for a private individual). However, for all that, it does not give rise to a relation of subordination of the same type as that between an employee and employer, nor is it subject to the same laws (business law on the one hand and labour law on the other). This simplistic vision can also be found in theoretical approaches that consider that the function of unions is mainly to

inform employees of what they ignore on the labour market due to the asymmetry of information.

Conclusion: unconvincing models of the labour market

The neoclassical model of the labour market is hardly convincing when taking the facts into account. In particular, it does not allow understanding why this market has remained so conflictual, with recurrent claims concerning both wages and working time, nor why legislation has finally turned its back on the major principles of liberal economics by allowing the actors to behave as monopolists. Likewise, the new theories that have resulted from the relaxation of neoclassical thinking have also failed to convince.

As was said previously, we shall not reintegrate any of the relaxations that have been examined. In particular, what is at stake, according to us, is not the "rigidity" of the wage rate as such but the perception of the supply of wage labour which leads to confusion in the way the wage rate is adjusted on the labour market during fluctuations of economic activity.

We therefore start from the theoretical basis of the neoclassical model of the labour market to introduce successively our two central hypotheses in the following chapters:

- a corrective hypothesis based on *the asymmetry of power between employers and employees, with the consequence that labour supply is not autonomous regarding demand but subordinated to or dependent on it*;
- an additional hypothesis based on *the specific influence of technical progress on the propensity of households to consume and thus on the dynamics of global demand through the innovations it generates in consumer goods*.

We also show that, while remaining at a very general level in terms of theory and without introducing sophisticated hypotheses and calculations, it is possible to clarify a substantial part of economic and social history.

3
The Asymmetry of Bargaining Power

Introduction

The historic and legal analysis of the labour market developed in Chapter 1 provided understanding of the nature of this market. The latter only exists because, beforehand, an asymmetry in the appropriations of production factors belonging to the individuals involved exists. Some possess capital and labour and are economically independent as individual producers (independent workers) or employer-producers. Others, bereft of capital, in order to live, are obliged to sell their labour power to employers on whom they depend economically. Labour is therefore a market in which the balance of power between the parties is fundamentally asymmetric, hence its intrinsically conflictual nature. The latter has made legislators aware that the great principle of *freedom of choice*, underlying the legal theory of contracts, could not be applied to most workers with respect to the relation that binds them to their employers. Hence, the whole objective of labour law (Ch. 1, §1.3) has consisted in providing a legal framework for an employer's de facto *power* over employees. This has resulted in the characterisation through jurisprudence of the employment contract, whose spirit, so jurists say, is one of a relation of economic and legal subordination by which an employee *exchanges a freedom against a security*. On the one hand, employees give up the freedom of their availability and the use of their time as they deem fit to place themselves under the authority of an employer, who will supervise them in the execution of the work to be performed. On the other hand, employees benefit from the guarantee of a unit wage, agreed from the outset, for the period of time during which they remain under the authority of the employer, independently of how the latter then exploits the production performed; that is,

independently of the company's economic results.[1] In this relation of subordination, employers obviously have the power to vary the duration and intensity of the work – without simultaneously modifying the wage rate – as a function of their economic interests. This was so in the 19th century in the absence of legislation protecting subordinates, and it basically remains so today: jurisprudence has always recognised the employer's prerogative to fix the working time that an employee must provide or be penalised. By taking a close look at current regulations governing part-time work and overtime (cf. Ch. 1, §5.3), it can be seen that it is employers who, in the last resort, impose their views; and their margin of variation in relation to the legal working time is relatively wide, with the application of the same wage rates.

Moreover this situation cannot be otherwise. If it were, it would no longer be a wage-based relation. If employees were price takers according to the basic principle of a pure and perfect competitive market – thus, takers of a wage rate – they would be perfectly free to fix the volume of labour supplied (in both duration and intensity) and thus not fall under any authority belonging to an instructing party. They would be fully entitled to enjoy the use of their time and so would become independent workers and service providers without any bond of subordination.

Obviously, this relation of economic and legal dependence which characterises the wage relationship can be varied. Human capital, i.e. professional competences, must be included in the capital (tangible and intangible) owned by individuals. However, all individuals, even employees, have more or less human capital linked to their labour. Nonetheless, employees with rare and acknowledged competences who perform their activity in companies with great freedom and for high salaries are few and far between, and they cannot become free of their employer without paying a price: the price of independence. In such cases, it would be more appropriate to talk of *non-subordinated* salaried workers. Otherwise, for the others, the term *subordinate employees* would be better. Thus, the criterion of economic dependence (in opposition to that of real economic autonomy) is pertinent for characterising the situation of most employees.[2]

Some economists concur that employees are not completely free to choose their working time but esteem that they can make up for this by retiring earlier or by asking to work part-time. Thus the hypothesis of optimising choice regarding labour supply remains pertinent. First, it is clear that the employer can refuse the demand for part-time work. Whatever the case, let's make a comparison and ration the food of an individual while he is active, nonetheless allowing him to ask for extra,

without any certainty that it will be given, after which he will be free to eat till full on retirement. Could it be said that he optimised his choice regarding food? Obviously not! Likewise with the supply of labour.

That being said, the freedom of choice of employees remains protected by the "labour market". We are not subject to a regime of forced labour! However, it is a limited freedom whose counterpart is the guarantee of a wage for any work provided.[3] Each employee is free to accept the demands of an employer (within legal limits), and remain in the company or else refuse and take the risk of leaving it. In other words, each individual is free to rent his labour power (his capacity for work) on the labour market, but this does not mean that he is capable of optimising the volume of work (in duration and intensity) he must provide.

Economists can also object that the obvious interest of employers is to do their utmost to ensure that their employees' aspirations are fully satisfied. Whatever the truth of the latter statement, they also have to contend with fierce competition from their rivals in the same market. However, the more the balance of power tips in their favour, the more they will be led to pass on the constraints to which they are subject to each employee and thus impose their point of view. Conversely, the employee will be all the more tempted to submit if he is in a position of inferiority.

It is necessary to understand that if one accepts the hypothesis according to which employees optimise their choice regarding labour supply, then it is no longer possible to distinguish them from independent workers. Thus, how is it possible to explain the conflicting nature of the labour market with its recurrent claims regarding wages and working time? How can the "labour question" be explained? By all these ideologies that aimed at destroying or correcting capitalism with the tragedies that resulted with communism and fascism? Through the edification of labour laws in democratic countries? In short, if this hypothesis were true, then the entire social and political history of the 19th and 20th centuries would become incomprehensible.

Lastly, economists sometimes present the labour market as the collaboration between two economic agents, each of which contributes a factor of production: capital from one and work from the other. The interest and power between the partners is equal since each is indispensable to the other. However, this is a truncated view of labour relations. Capital is not entirely alone, running on rails so to speak, in its search of labour. Rather the relation is formed by individuals in asymmetric situations regarding their contribution of factors and thus economic autonomy and power, which meet and negotiate. And even if the owners of capital

act like fund holders by delegating the function of entrepreneur to a manager, they must act through an intermediary, and at the very least, they use their workforce to exert the power of control. Otherwise, if they were unable to do so – that is, if they did not own their workforce – they would become physically dependent and fall under the wardship or guardianship of a third party that would wield the same functions and power in their place.

We now examine the consequences over short periods[4] of this asymmetric balance of power on labour supply and on the functioning of this market.

1 The consequences of this asymmetry of power on labour supply

1.1 Labour supply and its situation of dependence

A person will only offer labour on the market if the utility (well-being), in terms of income, working time, job security and the like, that he obtains (given the conditions fixed by the employer) is better than what he can obtain by not working, by remaining an independent worker or by devoting themselves to domestic work. Obviously, an individual will be all the readier to offer their labour on the market if he is deprived of independent means of existence. We saw previously that by using forever larger amounts of capital to develop every possible scientific and technical means to increase mass production, industry has progressively ruined swathes of independent producers unable to defend themselves against increased labour productivity and the resulting fall in the price of consumer goods. The concentration of land ownership, mostly in the hands of the aristocracy in the 17th century, had already deprived part of the peasantry of any independent means of existence, thereby providing the first cohorts of proletarians for the Industrial Revolution.

We can illustrate this alternative regarding the nature of labour on the basis of the classic trade-off between the income obtained from labour and leisure (non-labour). See Figure 3.1.

Let us imagine a worker with the same indifference map, whether they work as an independent or an employee. As an independent, the rate of remuneration for their work is w_1 and its duration is l_e. The small size of the company limits the level of pay they can earn from their work and, in addition, their capacities to invest in technical progress and economies of scale. The same work done as an employee in a larger, more modern company will provide them with a higher income: w_2.

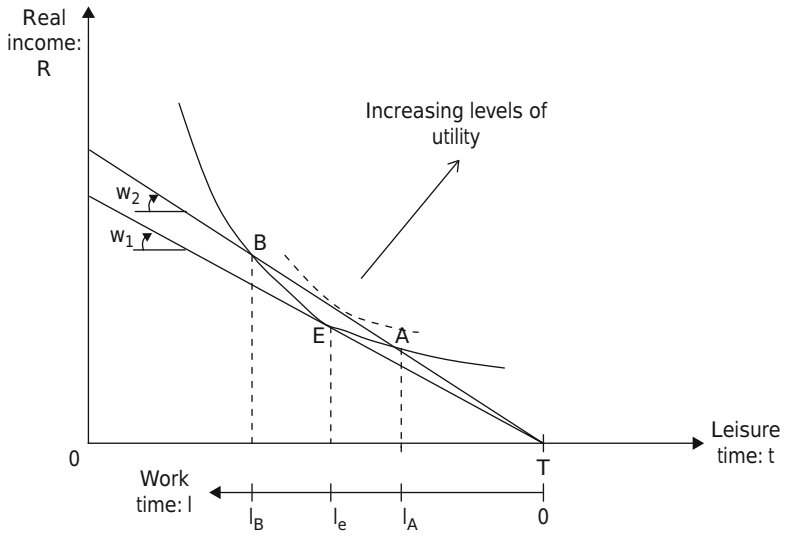

Figure 3.1 The trade-off between independent and dependent labour

- If the salaried working time fixed by this company (in its industrial branch) is lower than l_A, or higher than l_B, the worker will remain independent as they are situated on an indifference curve providing a higher level of utility than that which they would obtain as an employee.
- If the duration of salaried working time is between l_A and l_B, the worker will become an employee since they will achieve a higher level of utility than that which they would have if he were independent. But by making this option, they do not optimise their choice. As so well explained by jurists, by opting to become an employee, the worker gives up a freedom (to choose the duration of their work) against a security (income).

Global labour supply can be represented by a curve linking the number of persons entering the job market and the wage rate. This curve is upwards sloping as the number of independent (or immigrant) workers liable to leave their activity (or country of origin) to enter a given labour market will be as high as the wage rate is high. Furthermore, this curve is discontinuous – dotted line – insofar as the number of people is a discrete variable (see Figure 3.2). However, this curve in no way constitutes a *labour supply* (i.e. a number of people multiplied by a duration and intensity of work). As said previously, it is not because individuals are free to offer

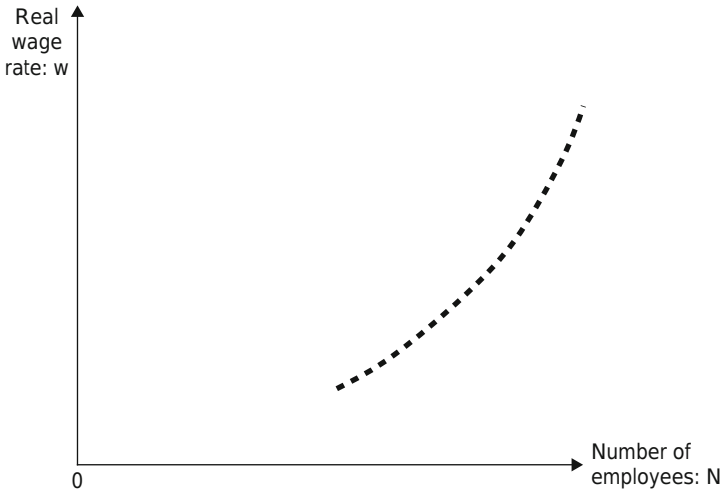

Figure 3.2 Global labour supply, N, in the market

their labour power in the market that they optimise their choice in terms of duration and intensity.

1.2 Individual labour supply when an employer decides to modify its duration

Let us now examine the logic of this *exchange of a freedom against a security*. To simplify things as much as possible, let us place ourselves in the context of the 19th century, when labour law was either non-existent or else inefficient. Once he had hired the labour, an employer enjoyed easily sufficient power to modify working time. Employees had little or no freedom to form unions.[5] The employee could choose to accept the working time demanded by the employer or refuse it and leave the company. Present legislation would have simply reduced the employer's margin of manoeuvre regarding the capacity to modify working time (Ch. 1, §1.3.4. and §5.3).

Figure 3.3 shows the indifference map of a given employee. For wage rate w_e and a non-labour income R_o, the optimal situation corresponds to working time l_e. On this basis, we can consider two hypotheses.

1) If the company fixes a working time: $l > l_B$, this employee will leave the company since, whatever the case, the utility they can obtain by working for it will be less than that obtained by not working.

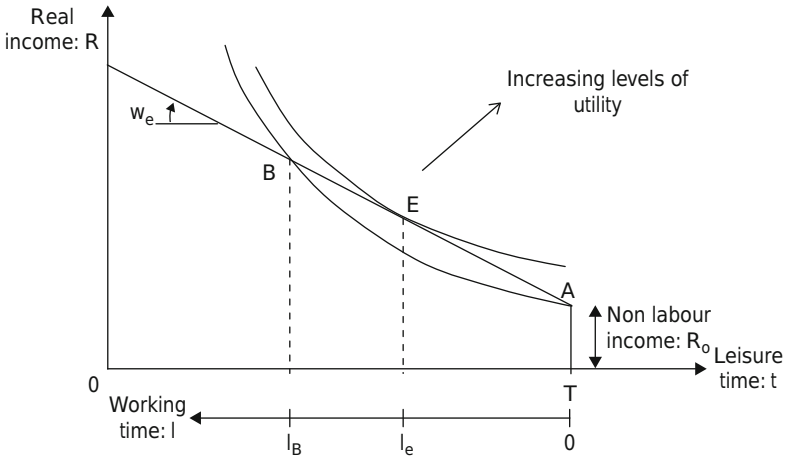

Figure 3.3 Effect of working time imposed on labour supply

2) If the company fixes a working time: $0 < l < l_B$, this employee will accept the work since the utility they obtain will be greater than that which they would acquire by not working. However, in this case, they could seek an alternative solution that would allow them to draw close to their optimal choice. A priori two paths are possible: the employee can find another company offering better conditions or become an independent worker.

- A change of company implies fixed costs: for prospection, possibly for transport to get to and from work, a change of home and so on. If the advantage (well-being) gained from changing companies is greater than its cost, the employee will go ahead and make the optimal choice. Though for this to happen, a dual condition must be satisfied.
  - On the one hand, there have to be companies in the process of hiring so that we are not in an economic downturn with rising unemployment.
  - Also, it is necessary that not all companies follow the same behaviour and, for example, all place themselves in an expansionary stance by spontaneously increasing working hours. Historically, this duration has been seen to increase (we explain the theoretical reasoning behind this further on).

    Whatever the case, competition between the companies and the mobility of the employees (normally strong during

expansionary phases) both result in levelling working conditions in terms of wage and working time. However, this in no way means that the latter corresponds to an optimal choice made by the employees, even collectively, given the asymmetry of power between them and their employers.

- The employee can effectively optimise their choice if he takes up an independent activity. However, this also involves a generally high fixed cost, especially regarding investments. This will be especially so if many employees take the same path, since the profitability of the activity could suffer. The employee gains, once again, only if the advantage (the gain in well-being) is higher than its cost. However, such opportunities are rare, given the historic decline of the active independent population and the low percentage it represents today.

This analysis brings to light the fact that companies undoubtedly have a certain margin in which they can vary working time beyond the optimal choice of their employees. Conversely, this duration could be shortened to nothing over the short-run without it being necessary for the employees either to quit their companies, in the case of a general crisis, or if the cost of setting up as independent workers remains higher than the loss of well-being due to inactivity.

1.3 Global salaried labour supply in a situation of dependence

The global effect of the modification of working time by companies on the supply of salaried labour is not easy to distinguish.

If working time is the same for all the workers of the same company, the global result of increasing it is theoretically uncertain. If individual preferences and the non-labour income of employees are very heterogeneous, it is possible, a priori, that the extension of working time, which will be accepted by some and refused by others – leading to their departure from the company – would be such that the global result cannot be predicted. However, if we pose the likely hypothesis that the preferences and non-labour income of most of the employees are relatively similar, the variation of overall working time would significantly affect global supply above and below the aggregation of optimal individual choices.

On the contrary, if companies are able to individualise working time and extend it to the breaking point, l_B, of each employee, the global volume of labour would certainly increase far above the aggregation of the optimal choices of the employees.

The graphs in Figures 3.4a, 3.4b, and 3.4c illustrate the global effects of an overall variation and an individual variation of working time for two employees (or two categories of employees), 1 and 2, working in the same company for the same wage rate w*, but each having different non-labour incomes and preferences.

Let us consider that the employer decides to apply a general modification of working time (see Figure 3.4b). As long as it remains shorter than l_{B2}, the two employees (or employee categories) will profit more from

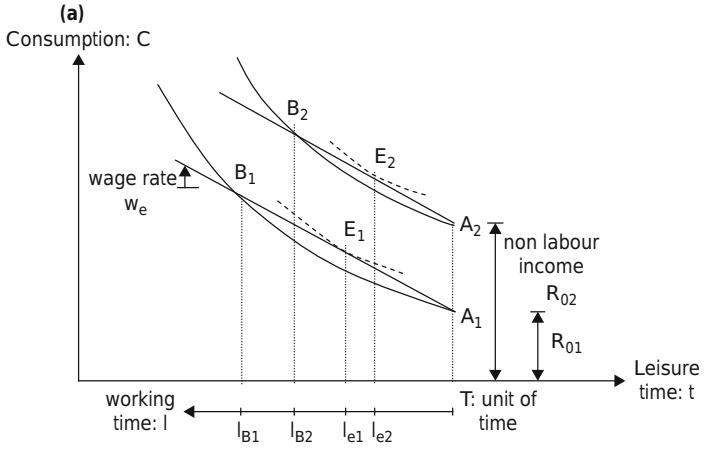

Figure 3.4(a) Company with two employees (or two categories of employee)

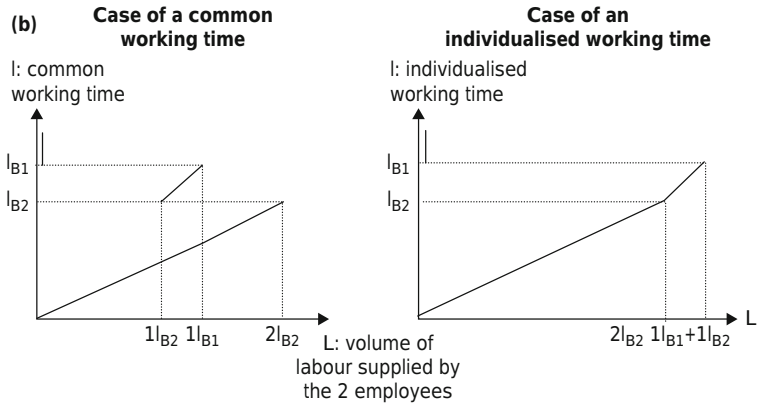

Figure 3.4(b) Variation of the volume of work supplied by each employee

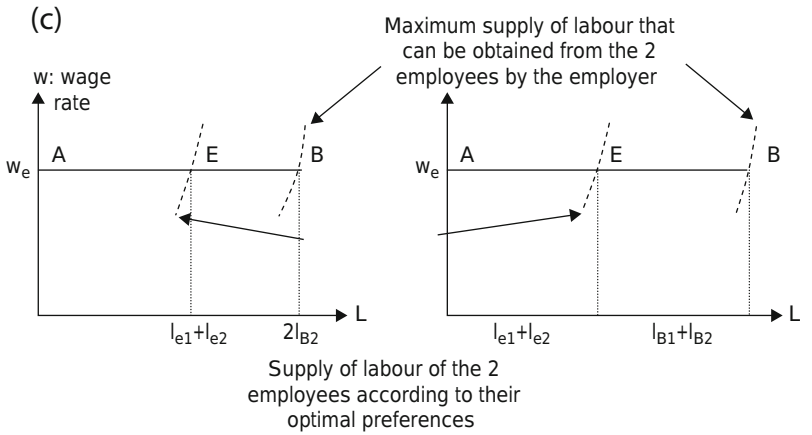

Figure 3.4(c) Total labour supply of two employees (or two categories)

remaining in the company and working the time demanded. However, if it exceeds l_{B2}, employee (or category) 2 will leave the company since the utility they obtain will be less than that which they would obtain by not working and corresponds to the indifference curve passing via point A_2. Lastly, if working time exceeded l_{B1}, employee (or category) 1 would leave the company for the same reasons.[6] This logic applied to a company with 2 employees (or 2 categories of employees) can be extended to an entire economy with *n* employees (or *n* categories).

We can also examine an *individualised* variation of working time decided by the employer (see Figure 3.4b). The convexity of preferences results in a variation of labour supply, significant above or below the optimal choice of each employee for a wage rate that remains unchanged.

Therefore it can be concluded that companies effectively have the power to make considerable changes to the global volume of labour supplied by employees above or below the aggregation of their optimal choices, especially if we reason in the short-run (see Figure 3.5). Companies not only determine labour demand, they can also influence its supply. The labour supply curves of the standard neoclassical representation are therefore ideal but totally fictional curves for employees. If we were to insist on providing a graphic representation of this supply of labour by employees, it would have to be shown by a *range* rather than by a curve. Naturally, this range of supply – on either side of the optimal supply curve – would be more or less wide (or more or less narrow), according to the asymmetry of power existing between employers and employees.

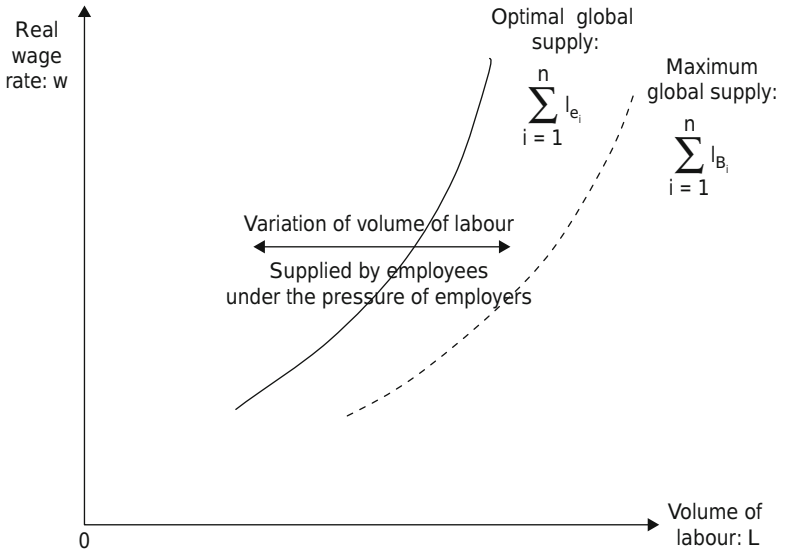

Figure 3.5 Subordinated labour supply takes the shape of a range of supply

Note: The subordination of employees to employers means that labour supply takes the shape of a range of supply rather than a curve of supply.

This conclusion may seem bold and even iconoclastic given that we are accustomed to analysing a market through the theoretical spectacles of a St Andrew's cross, expressing the confrontation of a supply and a demand. But once again, a supply (or a demand) represented by a curve presupposes that the economic agents it depicts optimise their choices, meaning that they are perfectly independent to make their decisions. However, this is not the case for employees and the volume of labour they supply; otherwise the entire social and political history of the 19th and 20th centuries would be completely incomprehensible.

1.4 Comparison with other markets characterised by asymmetries of power

Are there other markets that can be characterised by an asymmetry of power between the actors? If the answer is yes, how is this asymmetry manifested, and in what way does it differ from the situation prevailing in the labour market? A priori, the indicators capable of highlighting such situations are the conflicts that these asymmetries lead to and the intervention of the State in a regulatory or protective capacity.

At first sight, no other market has been as conflictual as that of labour. None, in any case, whose conflicts have been subject to official statistical studies with annual counts of the number of strikes and days' work lost, not to speak of the far more serious troubles that have occurred throughout history. Furthermore, one simply has to open a history of political ideologies to become aware that for more than two hundred years, the debate has remained "burdened" by the characteristics of this market, by what in the 19th century was called the "social question". All these ideologies wanted to free or protect workers and were presented as alternatives to liberal capitalism. Finally, the result is a specific legal framework for the labour market, indirect but ample proof of its intrinsically conflictual nature.

Conflicts and State intervention are clear signs of asymmetries of power; a wide range of such signs can be found in the agricultural sector. Farmers have long denounced middlemen, who are said to deceive them and "fill their pockets" at the farmers' expense. These middlemen have more or less been replaced by the agro-foodstuffs industry and hypermarket chains with the same effect. Demonstrations by small farmers, with sometimes violent episodes, are part and parcel of the social landscape in France. The situation is analogous with that of the labour market, with the State intervening heavily in the agricultural sector by regulating markets for products and also in the relations between landowners and tenant farmers. What is more, this intervention is also a historic constant.

Let us examine briefly how conflicts in the agricultural sector present similarities and differences with those found on the labour market between employees and employers.[7] We limit ourselves to four conflictual situations involving farmers.

- *Conflicts due to commercial fraud*

These situations have occurred in the commercial relations of farmers regarding both their purchases of inputs (fertilisers, phytosanitary treatment products, etc.) and the sale of their products (the case of isolated, poorly informed farmers confronted by animal traders who are both connoisseurs of animals and well informed about the state of the market). This is what led to the formation of unions and farm cooperatives at the end of the 19th century. The source of the problem was *asymmetric information*: the poorly informed farmer was cheated over the quality/price ratio of what he bought and sold. However, in this case the asymmetry is not due to the economic dependence that prevails on the labour market, and it does not influence the quantities supplied. Besides

leading to the professional organisation of agriculture, these conflicts led to changes in the law governing unfair competition.

- *Conflicts with landowners*

In many French regions before World War II and especially in the 19th century, farmers and sharecroppers were highly dependent on their landlords and the pressure they exerted.[8] The terms of the leases were short (generally from one to three years, rarely more), and their renewal was subject to the goodwill of the landlord. The asymmetry of power was blatant, above all for the sharecropper who had little more than his labour to earn a living for his family, whereas the landowner, in addition to his own labour, owned his land and a share of the operating capital. The analogy with the labour market is therefore significant due to this relation of dependence and the drafting of a specific law to regulate this market for the leasing of land for farming.

Nonetheless, in this case although landowners were unable to weigh directly on the volume of labour supplied, as on the labour market, they could fix the rent paid by the tenant. This pressure was potentially stronger on sharecroppers due to the demand for land from abundant labour composed of unskilled workers and domestics, mostly without capital. This was provided, at least partially, by the landowner, who also supplied the land and buildings. Conversely, when the capital required by the farmer was higher (for large farms), competition was less intense, placing large farmers in a more favourable position. Another difference with the labour market was that the tenant retained the management of his production; this mostly concerned the farmer, less so the sharecropper, as the landowner played only a small or partial role.

Before and after World War I, a strong sign of this dependence was that the sharecroppers of certain regions were able to join labour unions (in this case the CGT) rather than traditional farm unions. In 1945/6 this mobilisation led to the promulgation of the *Tenancy and Sharecropper Status*, the main result of which was a sudden end to the competition encouraged by landowners between tenant farmers as it provided real security to the farmer (or sharecropper) in place on the land they cultivated. On the one hand, this led to the reduction of the rent taken by landowners, and on the other, it considerably stimulated investment and increased productivity from the farmers. The same type of public intervention was enacted in all the developed countries where tenant farming and sharecropping were important activities.[9] This economic

dependence of farmers with respect to landowners still exists in certain developing countries today.

- *Conflicts with outsourcing companies*

During the 1960s, integrated production systems developed with battery and livestock breeding. Agro-foodstuff companies supplied farmers with animals for breeding, feed and often the technical procedures for production, after which they retook possession of the finished livestock in order to sell it. The farmers, who had to use their own money to invest in the buildings and breeding equipment as well as take on all the liabilities, were paid out of the difference between the buyback price of their production and the cost of the supplies upstream. These *integration contracts* were signed by small farmers owning little capital in search of additional income from such intensive production. However, if there was a market downturn downstream or if the technical-economic performance of the breeding system failed – perhaps due to poor-quality animal feed – farmers not only found themselves without income for their work but also unable to repay loans they had taken out for their investments. This led to a long struggle by the unions during the 1970s and 1980s that resulted in a change in the law on outsourcing in order to give greater protection to persons signing such contracts.

Obviously, these outsourcing contracts gave rise to a very wide variety of concrete cases regarding the specific nature of the relation binding the two parties. Generally, this relation was not one of economic dependence, like that of the labour market, where the employer can influence the supply (of labour). However, stronger similarities become apparent when the outsourcer (company or agent) becomes the farmer's creditor (usurer) and the farmer struggles to pay his debt, a blatant form of asymmetry of power.

- *Conflicts with the agro-foodstuff industry and mass distribution*

Today most of the protests made by farmers are focused on the agro-foodstuff industry and, above all, on hypermarket chains, which they accuse of forever more exacting demands and of putting pressure on farm prices. In reality, in this case the asymmetry of power stems from a recurrent trend of overproduction, whereas the demand for food is generally inelastic, placing farmers in a position of weakness. There are several reasons for overproduction: very favourable climatic conditions (market gardening, fruit growing, etc.); a specific supply structure (cost

and time of production) that sometimes generates a glut and other times a shortage (pork cycle, etc.); highly dynamic technical progress (whereas farm labour is professionally and geographically relatively static [milk, etc.]). Under these conditions, it is logical that the inelasticity of demand turns against producers when their supply becomes excessive. But when, for one reason or another, market supply becomes scarce, the asymmetry changes tack. This brings to mind pig breeders when the price cycle reaches its peak, to the downswing of the milk market in Europe in 2007, and the situation of farmers during the food shortages of World War II. In these cases, it was neither the agro-foodstuff industry nor hypermarkets that influenced the volumes supplied, contrary to the wage relation.

There is no need to go further. The purpose of these paragraphs is to emphasise the main characteristic of the labour market (of the wage relation), that is, that demand can influence supply, when compared to other situations that may be perceived as being affected by an asymmetry of power. This supply is not autonomous but subordinated to demand. Therefore, this type of situation is found only in certain outsourcing contracts or draconian subcontracting agreements. More specifically, jurisprudence has sometimes requalified employment contracts on the basis of painstaking examination of their provisions (e.g. a truck driver who owns his own truck but works only for a single company).

2 A deeper appreciation of labour demand

To see how, in the long and short runs, equilibrium intervenes in a market for which we compare a demand curve and a range of supply are compared – or more exactly, the equilibrium of a market in which supply is subordinated to demand – we examine labour demand in greater depth on the basis of the interdependence linking them to consumer goods.

2.1 Long-run demand for labour by a company

The labour demand theory presented in Chapter 2 in fact concerns a short-run situation, and generally, reasoning in economics manuals is limited to this timescale. Labour demand corresponds to the downwards slope of the marginal product curve below the *shutdown point*, that is to say, below its intersection with the average product curve. This ceiling, denoted A in Figure 3.6, means that the company (in a situation of pure and perfect competition) has no interest in hiring labour if it costs more than it produces added value.

However, in this situation, this is gross added value as it includes the share of the value that will make it possible to pay the fixed production costs. In the short term, it would be better for the company to produce, even if the cost of labour is such that the company cannot cover all its fixed costs, since, if it stops producing, it will lose its business altogether. However, in the long-term, it cannot do this as it cannot suffer losses over a long period. Thus labour must not cost more in the long-run than the net added value (of the fixed costs) produced.

This result is very easy to obtain mathematically. The value of the total product (the gross total added value), VTP, must be in the long-run at least equal or higher than the total product cost (cost of labour: VC = w·L + fixed cost: FC).

VTP	≥	VC + FC
$P_e Q(L)$	≥	w·L + FC
$P_e \frac{Q(L)}{L} - \frac{FC}{L}$	≥	w
Value of average product net of fixed costs: VAP_n	≥	wage rate

In the long-run, the price of the factor of labour (the wage rate) must be lower or equal to its average product value (or average added value), net of average fixed costs (per unit of labour). Otherwise the company will stop producing. It is therefore necessary to plot a second average product curve, located below the first and offset by the amount of these average fixed costs (see Figure 3.6).

This maximum labour cost – beyond which the company will make a loss (by being unable to cover all its fixed costs) – corresponds to intersection E between the marginal product curve and that of the average product, less average fixed costs (per unit of labour). Here again, it is easy to show graphically and mathematically that this intersection corresponds to the maximum average product, net of fixed costs: Figure 3.6. Going back to the analogy with the supply theory of goods, this intersection E can be called the *break-even point* (or *break-even ceiling*) *of labour*.

At this break-even point, the unit cost of labour does not generate any loss for the company, nor does it generate any pure profit (or surplus profit): the company is content to cover all its fixed costs, including the opportunity cost of its capital. If we take this reasoning further, we shall omit property rental and assume that these fixed costs are limited to the

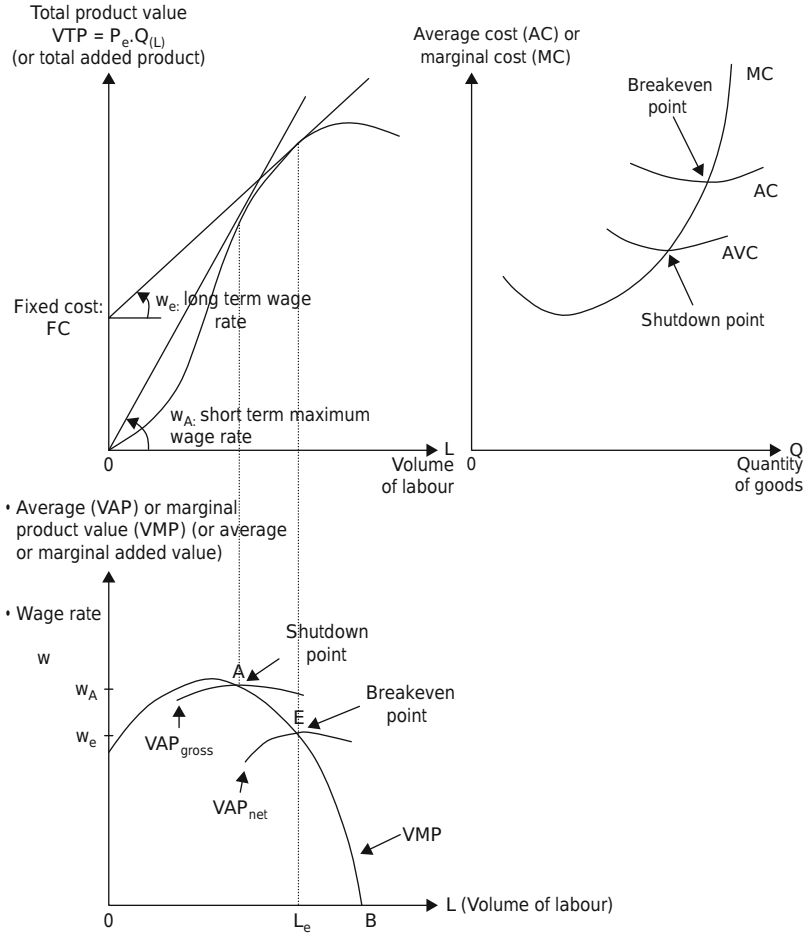

Figure 3.6 Relation between a company's supply of goods and its labour demand

cost of capital: depreciation and opportunity cost. Regarding the latter, we shall consider, in line with the generally accepted hypothesis, that the real interest rate remains constant in the long-run.

2.2 Demand for employees by a company

Let us assume that the labour demand of a company increases following new investment. To cope with this additional demand, the company has the choice, a priori, between recruiting new salaried workers or

else increasing the working time of the employees already hired. It will choose to recruit only if the resulting hourly cost of labour (including fixed costs linked to the hiring of new employees) is lower than the cost of additional hours (including possibly increased overtime rates). Of course, the higher the overtime rate, the greater the advantage for the company to take on new recruits, all other things being equal. Conversely, the higher the fixed costs linked to hiring new recruits, the greater the advantage for the company to opt for overtime.

2.3 Long-run labour demand on the market

The most interesting labour demand to study is that occurring over the long-run. To examine it, we shall start with the long-term equilibrium of the market for a good. We know that if the market for this good is perfectly competitive, the companies supplying it will not make any profit (pure profit) or suffer a loss in the long-run. The obligatory corollary of this result on the labour market is that *wage rates will tend to align themselves in the long run with the break-even point of labour* in the companies operating on this market; that is, with the maximum average product (added value) of labour, net of capital cost.

Since the mobility of factors of production, thus labour, in the competitive model is assumed to be perfect, these factors will tend towards the most profitable uses. This results in *equalising wage rates and thus the break-even point of labour* for all the companies in the economy.

Lastly, it is known that in a situation of perfect competition, the long-run supply in the market for a good is a horizontal whose ordinate corresponds to the break-even point of the companies offering it, that is to say, at least their maximum average production cost. (This is for a given level of technology and provided that the supply of primary factors stays perfectly elastic;[10] in other words, we reason in terms of constant returns in the long-run.)

The corollary stemming from this result, which is also well known in microeconomics, is that *long-term labour demand* in the sector supplying this good, but also *for the entire economy, is* also *a horizontal whose ordinate is equal to the break-even point of labour*, that is to say, the maximum average product (added value) of labour in the economy, net of capital costs. In other words, *this horizontal line expresses the long-run equilibrium wage rate on the labour market*[11] for a given level of technology (see Figure 3.7).

This result implies that any general rise (or fall) of the long-run equilibrium nominal wage rate will be reflected *proportionally* in the prices of all goods, including the factors of production,[12] in such a way that

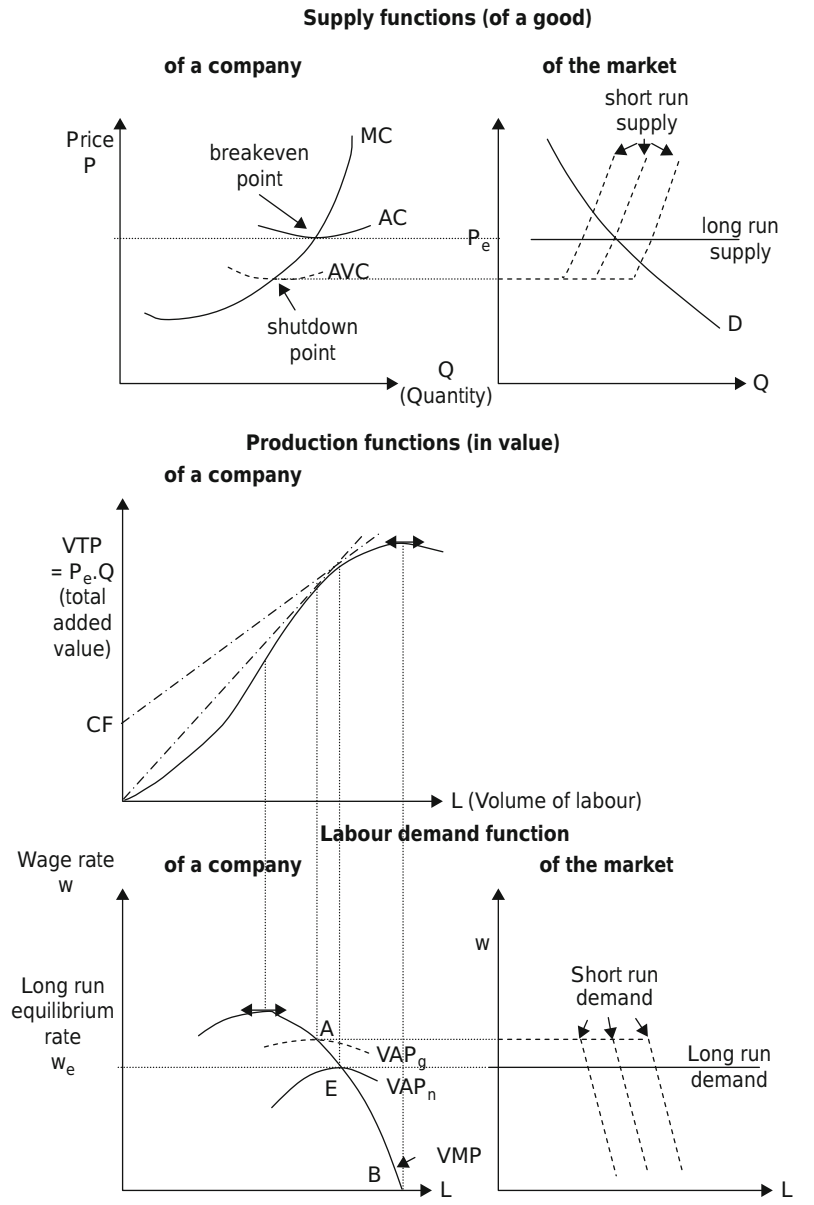

Figure 3.7 Relation between production functions and the supply of a good and labour demand functions

Note: The usual and simplifying hypothesis of the theory of long-run supply of a good, that is, that companies have the same production functions (added value), is illustrated in these figures.

the real wage rate remains unchanged. Likewise, price ratios between the factors (thus their productive combination) will stay the same. This means that in the long-run, substitution could not occur between capital and labour (in case of a variation of price of the latter) for a given level of technology.

If we reason in the long-run, another result is that the "monopolistic behaviour" of employees in a competitive economy has a neutral effect on the profitability of companies and on the volume of employment. Its only effect in the case where wage demands exceed the gains in productivity of the economy would be to stimulate the generalised inflation of wages and nominal prices, though without affecting their real values. This is true both in a closed economy and an open one insofar as, in the long-run, the inflation differential between countries is reflected by their exchange rates, thereby keeping the ratios between the real prices of imported and exported goods unchanged.

3 Equilibrium and disequilibrium of the labour market in a situation of asymmetric power

3.1 Maximising profits by extending working time

Let us return once again to our hypothesis of the balance of power between employers and employees – about which jurists and historians have long agreed – which states that the way the labour market functions is highly specific. Not only do companies determine labour demand, but they can also influence its supply. This leads to a very different type of situation from that prevailing in the market for goods (or for other factors of production) where suppliers are independent of demanders and vice versa. The term "labour market" is in some respects misleading. In this trial of strength, if companies demand a certain volume of labour (in hours and intensity), to the point where marginal product value equals the wage rate, they are not in fact buying a determined volume of labour; rather, they seek to hire a *labour force* (or *capacity*) that can be employed to maximise profits. This relationship is fundamentally different. If employees' possibilities for protest are limited and there are no legal limits to working time, companies have, a priori, considerable leeway to determine at their convenience and concomitantly both the volume of labour supplied and its price (i.e. wage rate). To maximise their profits, it is in their interest to jointly increase the duration (and intensity) of labour and lower the wage rate, as shown in Figure 3.8.

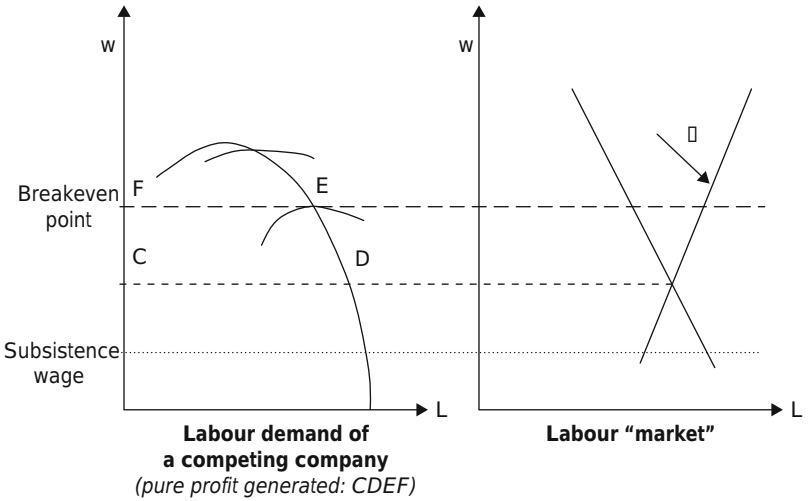

Figure 3.8 Strategy of maximising profits by lowering the wage rate and extending working time

However, the observations made on the elasticity of the labour demand curve of companies over the last three or four decades have shown that it is generally lower than unity in absolute value.[13] This means that the variation of the wage rate is more than inversely proportional to the variation in volume of labour supplied. Obviously, it cannot be asserted, at first sight, that this demand has been inelastic since the beginning of the Industrial Revolution. However, if we deem this inelasticity likely, deploying a strategy to maximise profits by lowering the wage rate and increasing the volume of labour would lead to a reduction of the payroll and individual wages for a given level of technology and stock of capital. The culmination of this strategy would be that the employees would receive only subsistence wages (in terms of wage rate and leisure time) to ensure the maintenance and reproduction of their labour power.[14]

Nonetheless, this iron law of the vital minimum that brought Marx to confront Lassalle in the 19th century is flawed as it does not take into account the interdependence between the payroll distributed and the global production achieved,[15] nor does it take into account the contradictions that emerge when technical progress increases factor productivity, that of capital and labour. In addition, this strategy to maximise profits by lowering the wage rate would constitute a breach of an employment contract whose main clause specifically emphasises the wage rate.

Otherwise, lasting inflation would be necessary to keep to the nominal rate agreed in the contract while allowing the real rate to depreciate. This abrupt scenario of lowering the wage rate and increasing working time is not currently realistic though it probably was at the beginning of the Industrial Revolution (see Ch. 4, §5.1).

3.2 Maximising profits by not channelling gains in productivity into the wage rate

Let us assume from the outset that we are in a perfectly competitive economy (except for the labour market, due to the asymmetry of power prevailing between employers and employees) in a situation of long-run equilibrium. The companies generate neither pure profits (surplus profit) nor losses. The wage rate is therefore situated at break-even point, that is to say, at the (net) maximum average product (in value) of labour (net average added value).

Next, innovations in the production process increase labour productivity in companies and, consequently, the demand for labour – represented for each company by value of marginal product curves (marginal added value; see Figure 3.9).[16]

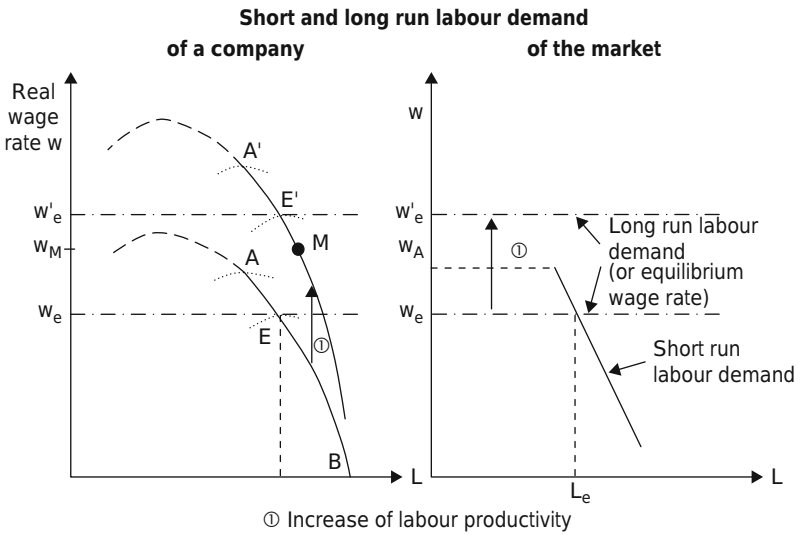

Figure 3.9 Strategy of maximising profits by not channelling gains in productivity into the wage rate

To increase its profit margin, each company will try to prevent the increase in wage rates from following that of labour productivity. This rate will therefore be lower than break-even point, though in parallel, and the volume of labour hired will increase. This increase could be satisfied by extending working time, intensifying work rates within the existing working time or recruiting new workers from the ranks of the unemployed or partially unemployed (such as small farmers and artisans marginalised by the current evolution of the economy and vegetating in small underproductive structures; point M in Figure 3.9).

The total sum of wages will thus increase (even if the wage rate remains invariable following the effect of technical progress, the payroll will increase simply due to the increased volume of labour). However, this increase in wages will remain proportionally lower than that of the company's profit margin. Since there is a time lag between the wage rate and break-even point of labour, the *share* of added value attributed to the gross return on capital increases whereas that attributed to the employees decreases.

The increase in the profitability of capital (of its average and marginal products) results in an increase in the rate at which companies invest to the extent that production capacity will develop faster than consumer purchasing power (for the sake of simplicity, this purchasing power can be assimilated with wage incomes distributed).[17] However, it is known that in the long-run, growth in investment (corrected for cyclic variations) is relatively proportional to that of consumption.[18] Thus, in relation to a trend of balanced and regular growth in the long-run, the rift between the evolution of profits and wages will generate a more than proportional increase in production capacities and also a less than proportional increase in consumption.[19]

3.3 Crises of overproduction/underconsumption (or overinvestment)

This process will result in a crisis of overproduction/underconsumption after a certain time, given the response time of investment in production – that is, the time between the decision to invest in production and the moment production increases and additional products are sold on the market.[20]

Companies react to such crises not only by seeking to reduce their overproduction – the effect of which will only have a limited impact on their economic activity – but above all by freezing their investments since poor sales are due to the surplus production capacities that developed previously. Consequently, the economy starts spiralling into a depression

phase. The collapse of demand for capital goods leads to massive unemployment in the sectors producing them, in turn decreasing the income distributed. This fall in global income will lead in turn to lower consumer demand, again causing companies to trim their business, employment and the income distributed, and so forth. However, as Keynes explained, each contraction of income distributed (ΔR_i) corresponds to a reduction in consumption but in lower proportion: $|\Delta C_i| < |\Delta R_i|$. Thus, even if companies continue to freeze their investments, a stage will be reached (*savings threshold*) at which all the income distributed will be consumed (see Ch. 4, §1.1). This is the threshold at which companies will no longer have any reason to reduce their production. The trough of the depression has been reached, and, little by little, business will pick up again since companies will have to invest sooner of later, if only to replace obsolete equipment.

A new cycle can begin after this recovery, with a new expansionary phase of profits and investment that will result once again in a crisis ... and so on, for as long as technical progress continues and the balance of power remains tilted in favour of employers – who set the duration (and intensity) of labour and wage rates, thus in the distribution of added value – unhindered by union action or State intervention.

A crisis of overproduction signifies that the nominal (displayed) value of the production of consumer goods is, at the time of its occurrence, higher than the corresponding nominal purchasing power. Thus equalisation between the two can occur only through a fall in the sales price of consumer goods. The real wage rate will therefore increase during the depression following the triggering of the crisis until it exceeds the new long-run equilibrium rate (the new break-even point). Indeed, we saw previously (§2.3 above) that the wage rate tends to become aligned in the long-run with the net maximum average product of labour (i.e. with the break-even point): during this period companies do not make any surplus profit but are content to cover the opportunity cost of capital (an opportunity cost compatible with the trend of long-run growth). Thus, if companies generate surplus profits during the expansionary phase (with a real wage rate lower than the break-even point), they will record losses during the following depression phase (with a real wage rate higher than the break-even point), thereby cancelling the previous surplus profits over the entire cycle.

It would be in the collective interest of companies to permanently index the wage rate to the (net) maximum average product of labour in the economy. For a surplus profit amounting to zero in the long-run, it would be better to avoid crises and benefit from regular growth

and better labour and political relations with employees, with always optimal average working conditions! In addition, the opportunity value of the labour supplied by employees would increase in proportion to the conditions provided them. This is not a simple theoretical consideration in the case where a company goes bankrupt, making it necessary for its manager-owner to immediately seek new employment. It is easier to understand why enlightened employers saw the advantage of limiting working time – through government legislation – to avoid overproduction and the unbridled and destructive competition that follows. However, it is in the interest of each company, individually, to seek the highest possible profit and ensure that the wage rate it pays does not follow its gains in productivity. And if a common rule were to be introduced, the company would seek to free itself in the absence of commitment from the public authorities. Once again, we encounter the contradiction between collective and individual interests observed by C. Rist in industrial companies throughout the 19th century regarding the legal limitation of working time.

4 The "rigidity" of the real wage rate

On the basis of Figures 3.10a and 3.10b, let us look in greater detail at how adjustments to the labour market occur during a sudden contraction of global demand for consumer goods (the origin of this contraction is not important; it could be a crisis of overproduction leading to a slump in investment, loss of outlets, a general rise in the prices of imported consumer goods, etc.). For this examination we consider the market still perfectly competitive (apart from the labour market, due to the asymmetry of power between employers and employees), with a constant level of technology and, to facilitate our reasoning, with companies all having the same production functions (added value).

Figure 3.10a shows the comparison of supply and demand in the short and long-run in goods markets. The axis of the ordinates measures the general *level* of nominal prices. On the one hand, the horizontal ordinate P_e indicates the general long-run equilibrium price level (corresponding to the minimum average production costs, i.e. the break-even point of companies). This horizontal represents the global long-run supply curve of all companies. On the other hand, the horizontal ordinate P_A indicates their shutdown point.

Figure 3.10b shows short- and long-run labour demand, corresponding to the market for goods (as defined previously in Figures 3.6 and 3.7). The axis of the ordinates measures the *real* wage rate (taking into account

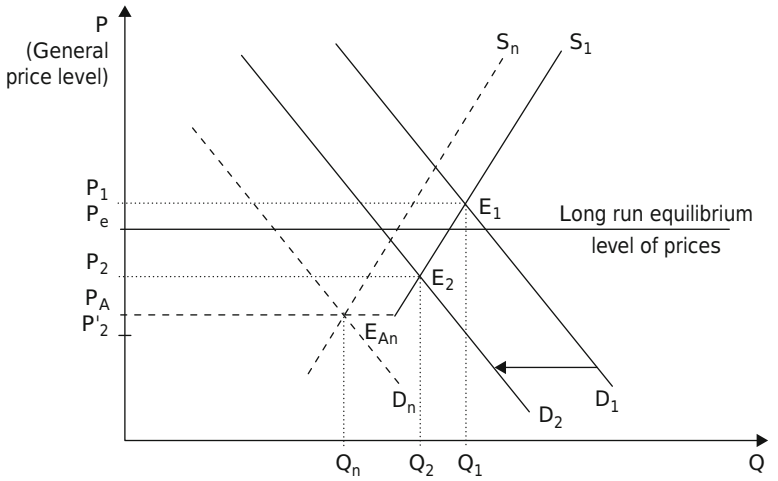

Figure 3.10(a) Adjustments on the market for commodities

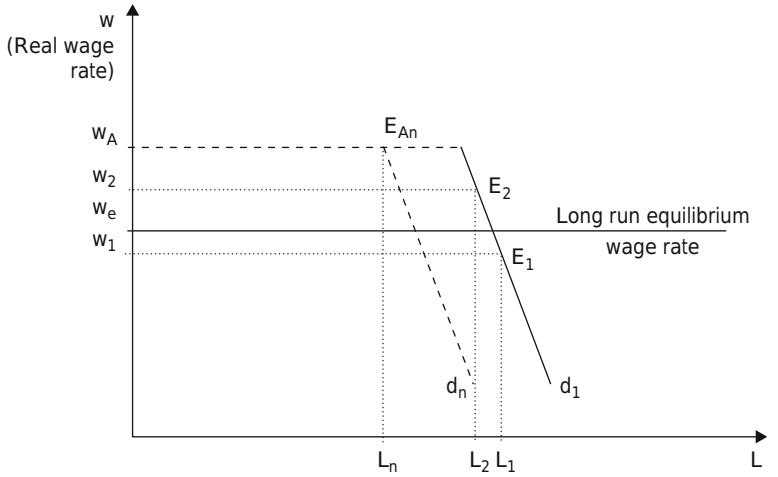

Figure 3.10(b) Adjustments on the labour market

the variation in the general level of nominal prices). On the one hand, the horizontal ordinate w_e indicates the long-run equilibrium wage rate (corresponding to the [real] net maximum average product of labour, that is to say its break-even point in companies). This horizontal ordinate represents the long-run labour demand curve of companies (for a

given level of technology). On the other hand, horizontal ordinate w_A indicates the shutdown point of the factor of labour in companies. In Figure 3.10b, labour supply is not represented insofar as – as shown in Figure 3.5 – it can vary over a more or less wide range according to the balance of power between employers and employees for the same wage rate. Obviously, this supply is not unlimited, though there is no point in showing the extreme limit here.

To start with, the global short-run supply of and demand for commodities is represented by curves S_1 and D_1. The general level of prices is P_1 (higher than the break-even point P_e of companies), and the quantity produced is Q_1. This corresponds to a situation in which companies generate surplus profits. Here we are in an expansionary phase. On the labour market this initial situation is expressed by the short-run demand curve d_1, a wage rate w_1 (lower than the break-even point of labour w_e for companies), and a volume of labour hired L_1.

Let us look at the effects of a sudden contraction of demand for commodities from D_1 to D_2.

- In the market for commodities

In the short-run, the number of companies and the global capital stock remain the same; likewise for the initial supply curve S_1. A new equilibrium falls into place between demand D_2 and supply S_1, leading to a general reduction in price levels, from P_1 to P_2, and a decrease in quantities produced from Q_1 to Q_2. It can be assumed that the global contraction of demand from D_1 to D_2 is sufficient that price P_2 is lower than P_e: thus companies cannot cover all their fixed production costs and run up losses.[21]

In the long-run, the global supply and demand for goods will contract in a depressionary spiral until they reach the savings threshold if companies continue to freeze their investments. At this point, the entire product of labour is consumed. Savings and thus investment are globally nil in the economy. This means that the price level of goods is set at the shutdown point of companies: P_A. Their fixed production costs – assumed to be limited to the cost of capital – are no longer covered. The trough of the depression can be represented by equilibrium point E_{An} in Figure 3.10a.

- In the labour market

The previous adjustments in the goods market should correspond to the following: In the short-run, the supply function S_1 remains the same,

the resulting reciprocal labour demand d_1 also remains the same. Indeed, since we are reasoning in real values, the labour demand of companies reflects the variation of the *marginal physical* product of labour within them.[22] But in the short term, there is no change in the physical product of companies. The reduction of the general price level from P_1 to P_2 should result in a rise in the real wage rate from w_1 to w_2 (therefore higher than the break-even point of labour costs w_e but lower than its shutdown point w_A) along with a decrease of the volume of labour hired from L_1 to L_2.

In the long-run, the contraction of the economy until the savings threshold can be represented by point E_{An} in Figure 3.10b. Since the entire product of labour is consumed (thus implicitly rewards work, including that done by entrepreneurs), the real wage rate reaches its break-even point w_A – that is, it is equal to the gross average product of labour – when the economy reaches the trough of the depression.

Regarding this short-run adjustment, let us return to the labour market, since it is by no means intuitive to think that a contraction of global demand can result in an increase in the *wage rate*.

We can assume that companies seek to compensate the fall in prices by lowering the nominal wage rate. Let us assume that they can do so without being impeded by the collective action of employees in such a way that the *real* wage rate stays at w_1 instead of rising to w_2. For this unchanged real wage rate, the quantity of goods, Q_1, produced by companies will also remain unchanged; these goods can find buyers only at a price P'_2, lower than P_2, thereby aggravating their losses!

Consequently, in the downhill race between prices and the nominal wage rate, it is obviously prices that will be the first past the post, meaning that the real wage rate will be effectively revalued in the short-run. Indeed, faced by the *contraction of global demand*, it is in the interest of companies, in the short-run, to reduce their production and thus the volume of labour hired to the point where *the marginal physical product of the latter increases* as does, in parallel, *the real wage rate*. As will be seen further on (Ch. 6, §2), Keynes perfectly understood this simultaneous rise in wage rates and unemployment during crises, though his explanatory outline appears to have been largely overlooked.

In the contrary case of a sudden expansion of global demand (e.g. following a vigorous upturn in investment), the phenomena of adjustments on markets for goods and labour will be the opposite of those that have just been described for a contraction.

It is essential to understand that when the global demand curve shifts, it does not lead to a reciprocal shift in the labour demand curve,

since the latter is considered in real terms. The labour demand curve is deduced directly from the global supply of goods by companies (from their physical production functions), not, of course, from the global demand curve. In the long-term, it is because the global supply curve shifts in response to variation in global demand that the labour demand curve does the same.

However, during the depression phase following the triggering of a crisis, the successive contractions of global demand chronologically *precede* those of global supply (since at the beginning companies decide to freeze their investments). (The global demand curve shifts first to the left.) This is followed by a fall in the price of goods and a concomitant increase in wage rates. During the expansionary phase, successive increases in global demand also *precede* those of global supply (as companies renew their investments). Afterwards prices increase and real wage rates fall. However, the proportionally faster rise in profits during this phase, due to the asymmetry of power in the distribution of the added value produced, means that *the dynamics of supply will gradually catch up with the dynamics of demand until it overtakes the latter*. Then the crisis occurs, with a fall in prices for goods and an associated increase in wage rates. In Chapter 4 (§4.1), we reconstitute the sequential scenario of these cyclic (or short-run) crises.

It is probably due to facility, as Keynes suggested,[23] that we consider the labour market to function like that of consumer goods. In one way this is true, except that it is perfectly *symmetrical*, which is not exactly the same thing. In the short-run, when prices vary with global demand, the real wage rate also varies but in *reverse*. In the long-run, the real wage rate will become aligned with the net average product or labour, whereas the variation of the volume of labour merely reflects – on the basis of a given productive efficiency (linked to technology) – the upstream variation of the quantities of capital goods and consumer goods demanded (i.e. global demand).

This then is how the "rigidity" of the fall in real wage rates, so often called into question, can be explained in the case of crisis. It fluctuates around the break-even point of companies, that is, the long-run equilibrium wage rate. In fact, there is neither mystery nor anomaly. It is this axiom of labour supply represented by a curve (assumed to reflect the optimal choices of employees) which makes this "rigidity" incomprehensible The "monopoly" power of unions and minimum wage rates are in no way to blame. Nor can we accuse any form of asymmetry of information or imperfect competition (except the asymmetry of power).[24] Given the *total interdependence between global production*

and its distribution in income, we can understand – if we reason in terms of real values – that the remuneration of a given volume of work can be compensation only for the production it permits less the part allocated to capital by the employers, knowing that in the long-run, the gap between a change in capital stock and in the purchasing power of consumers cannot be too great.[25] For real wages to fall in the long-run, the production functions of companies must become less efficient, for example, after the accidental destruction of productive capital (war, natural disaster, etc.), a technological regression or the exhaustion of raw materials. This is all in accordance with the observations of contemporary observers and historians, particularly Jean-Charles Asselain, who showed that real unit wages increase during depression phases despite the rise in unemployment!

Conclusion: a social history that becomes intelligible over short periods

This chapter has focused on the hypothesis of the *asymmetry of power between employers and employees* on the labour market. It has been borrowed from jurists; though in reality, it has been taken from the framework of a traditional microeconomic standpoint put forward by Adam Smith and developed by Sismondi, as early as 1819, and by Marx and by other lesser known classical economists. Although each individual is "free" to place themselves on the labour market or not, this does not mean to say that they can optimise their choice regarding the quantity of work supplied. Those demanding labour (the employers) are able to influence the duration and intensity of the work supplied as a function of their interests and the power they wield. In other terms, the supply of labour is not independent of demand but dependent on it. This makes it possible to account for economic and social history in a much more convincing way.

It is possible to understand from the outset why the labour market has been and remains intrinsically conflictual, unlike any other market. The main challenge is the distribution of the added value produced between the remuneration of work and the remuneration of capital. This all becomes clearer when examining the action of the labour movement through history: its intuitive reasoning aimed at reducing working time (thus its supply) in phase with economic growth to raise wages[26] and its desire to slow down runaway production (thus profits and investment) by limiting this duration in order to regulate crises of overproduction/underconsumption. If we still hold as likely that the elasticity of the

curve of the global demand for labour is less than unity (in absolute value), employees will not only maximise their individual hourly wage rate but also the global payroll by placing themselves at the break-even point of labour (point E or E' in Figure 3.9). Seen more globally, all the ideological effervescence of the 19th century, aimed at solving the "problem of labour", becomes clearer when seen from the standpoint of the fundamentals of neoclassical theory – which is not the case of the basic model.

Likewise, it can be understood why legislation was finally passed to give employees the right to behave as monopolists. General wage increases obtained by coalitions within a given monetary space in no way affect the profitability of competing companies nor the global volume of employment. (The main impact of excessive increases of nominal wage rates is the generalised inflation of prices, which are afterwards corrected by successive monetary devaluations; cf. the sudden increase in wages in France in 1936 [Matignon agreements] and in 1968 [Grenelle protocol].) The recognition and development of collective agreements, whose purpose is specifically to offset the state of inferiority of one of the contracting parties vis-à-vis the other, can be explained; likewise for the establishment of the minimum wage. Thus the legal limit applied to working time (the first historic crack in the edifice of liberal economics) also becomes intelligible. (However, in the following chapter, we shall see the reasons that can lead labour unions to claim the reduction of this limit over the long run and thus governments to act accordingly).

This re-examination of the labour market also makes it possible to account for the cyclic crises that have recurred about every eight to nine years throughout the industrial history of the 19th century and the first half of the 20th, as well as for the behaviour of the labour movement. Thus we saw that increases of real wage rates during the depressions that followed the outbreak of these crises can be perfectly well explained on the basis of traditional microeconomics as long as very close attention is paid to the interdependence between the demand for labour and the supply of goods and as long as one is convinced that the labour supply *curve* (as the expression of the autonomous and optimal choice of employees) is in fact fictional.

Conversely, the disappearance of economic crises following World War II can be interpreted as the result of trade unions asserting themselves against company managements and the progress made in labour law. This assertion and these advances can be attributed to political contexts favourable to the Labour Movement following the crises of the 1930s and after the war in the Scandinavian countries, the United

Kingdom, the United States and France. Trade Unions were henceforth able to influence the distribution of gains in productivity and added value more favourably for workers (thanks in particular to the generalisation of collective bargaining).

Nonetheless, over the last thirty years – that is to say, since the politics of monetary rigour and the liberalisation of the labour market were first implemented at the beginning of the 1980s in the United Kingdom, with Margaret Thatcher, and in the United States, with Ronald Reagan – crises have appeared every eight to ten years in the developed countries and emerging economies. Are these types of crises the same as those that punctuated the 19th century and the first half of the 20th? Do they fall within the same framework presented above in every aspect? Obtaining a definitive response would require more thorough investigations than those presented here.

Whatever the case, numerous elements give credence to this interpretation, including embryonic labour laws in most of the emerging economies, the banning of unions and strikes in some countries and a considerable decrease in collective bargaining and weaker unions in the USA and the UK. On the other hand, one should note the very significant increase in the power and demands of shareholders, a much faster increase in profits than in wages during the expansionary phases (at least at their beginning), as reflected by the evolution of stock market indexes, and reduced investment by companies during recessions; and so forth. All know that turnarounds in the real economy can occur alongside financial crises, today as in the past, when the banking system fails to monitor the risks run by its various agents. The main difference with the 19th century and the first half of the 20th is the opening up of financial markets and their subsequent boom, giving ordinary people the possibility of making investments anywhere on the planet in a couple of clicks. The result is that the mass of (surplus) profits generated by the real economy is henceforth reallocated on a planetary scale, with the emerging economies profiting most. However, when viewed globally, the underlying reasons for these crises appear to remain the same.

Thus the implosion of the dot-com bubble at the end of 2000, linked to the development of new information and communication technologies, presents all the characteristics of the Juglar cycle described by historians. However, two other crises concern much more banal sectors of activity. The explosion of the stock market and property market at the end of the 1990s above all affected Japan, though other developed countries did not escape unscathed. As for the crisis that began in 2008 and which continues in Europe, it is rather more complex. It stems from

the collapse of the residential property market occurring as far back as 2006 in the United States, Ireland and especially Spain. This property market bubble was fuelled by a large number of actors, including banks, promoters and construction and public works companies. The policy of keeping interest rates low after the dot-com bubble also added more fuel. Nonetheless this crisis in the real economy was accompanied by a severe financial crisis caused by the risks taken by the banks with the subprime system and the reaction of suspicion that followed. What is more, in the Eurozone this crisis has combined with a crisis of national debts caused by the reluctance of the central bank to play the role of lender of last resort. This all occurred as part of a long-term trend in which growth has been the lowest since the end of World War II.

4
The Dual Impact of Technical Progress

Introduction

The previous chapter was devoted to refuting the basic neoclassical representation of labour supply, according to which households are assumed to work for a duration and at an intensity such that they optimise their choices. This means that the global volume of labour taken on by companies does not correspond to the aggregation of optimal supplies from individuals. This raises the question of the determinants of this global volume.

It was seen (Figure 3.10, §4, Ch. 3) that in the short-term the curve of labour demand is deduced directly from the curve of the global supply of goods (investment and consumption) from companies. However, in the long run, this global supply of goods merely reflects the variation, upstream, of the global demand for goods (investment and consumption). This leads to a new question: what are the determinants that act in the long run on this evolution of the global demand for goods; that is to say, on its specific interrelation with all the income distributed upstream.

We know the answer given by Keynes, who also rejected this basic neoclassical representation of labour supply:

> The propensity to consume and the rate of new investment determine between them the volume of employment.[1]

As with any factor of production, this *new investment* can be deduced directly from the production and supply of goods, and businesses respond through these to global consumer demand. However, statistical analyses have shown that over a long period, investment, once corrected for cyclic variations, evolves at more or less the same pace as

consumption.[2] Thus the problem to be studied can be reduced to the examination of the *determinants that act over the long term on the propensity of households to consume* (i.e. on their consumer behaviour).

The first observation made was that over this same long period, economic activity does not evolve regularly. Phases of two to three decades of strong growth succeed phases of slow growth of about the same duration; these fluctuations over long periods are known as Kondratieff cycles. According to Schumpeter, they stem from technical innovations that occur *in clusters*, in other words, grouped and erratically through time.[3] What remains to be understood is how they act on the economy and, in particular, what the consequences may be on investment and consumption. To tackle this issue, we shall start with the debates on Keynes's hypotheses on consumer behaviour. This therefore leads us to introduce our second hypothesis, announced in the General Introduction, that technical progress has *two* impacts on economic dynamics. One affects the supply provided by companies; the other affects consumer demand.

However, before answering this issue, we shall make three clearly established observations (cf. Ch. 1, §3–4).

1) One of the two economic reasons that led the labour movement to make recurrent claims to reduce working time concerns the combat against unemployment, as it considered that in certain periods technical progress caused labour productivity to increase faster than consumption.
2) Consensus among employees to reduce working time has always ended at the end of the downturns of the Kondratieff cycle: cf. the campaigns to push forward claims during the 1840s, 1880–1890, the 1930s, and 1980–1990 to obtain, respectively, the 10-hour day, the 8-hour day, the 40-hour week, and lastly, a new reduction of working time resulting in the 35-hour week in France.
3) Over a period of a century, the effective duration of working time has been halved, whereas concurrently, the hourly cost of labour has increased more than tenfold (Figure 1.1, §3.2, Ch. 1). This suggests that the pace of increase of consumption has not followed that of labour productivity. Otherwise this working time would have remained invariable: if productivity doubles, so does consumption (at a constant rate of investment and saving). How can this disparity between the two rates of increase be explained, especially given that the reduction of working time has been highly irregular when correlated with the evolution of the cost of labour? It even increased

between 1938 (and 1949) and the middle of the 1960s, meaning that the impetus of consumption was stronger than that of labour productivity.

1 The apparent contradiction between short- and long-run consumption functions

1.1 The Keynesian hypothesis of the concavity of the short-run consumption function

The Keynesian consumption function gave rise to fierce debate and still does. Applied to income, the function is described as being concave.

> The fundamental psychological law upon which we are entitled to depend with great confidence both a priori from our knowledge of human nature and from the detailed facts of experience, is that men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income. That is to say, ... dC/dR is positive and less than unity.[4]

He then stated that this marginal propensity to consume, mpc = dC/dR, probably diminishes:

> The marginal propensity to consume is not constant for all levels of employment, and it is probable that there will be, as a rule, a tendency for it to diminish as employment increases; when real income increases, that is to say, the community will wish to consume a gradually diminishing proportion of it.[5]

Keynes justified this "*fundamental psychological law*" in cursory fashion, by asserting:

> For the satisfaction of the immediate primary needs of a man and his family is usually a stronger motive than the motives towards accumulation, which only acquire effective sway when a margin of comfort has been attained.[6]

Above all, he provided an indirect justification based on the cyclic economic fluctuations that occurred every eight to nine years during the 19th century and the first half of the 20th, during which phases of expansion alternated with phases of depression.

> [T]he stability of the economic system essentially depends on this rule prevailing in practice. This means that, if employment and hence aggregate income increase, not all the additional employment will be required to satisfy the needs of additional consumption. On the other hand, a decline in income due to a decline in the level of employment, if it goes far, may even cause consumption to exceed income... Thus, when employment falls to a low level, aggregate consumption will decline by a smaller amount than that by which real income has declined...; which is the explanation why a new position of equilibrium can usually be reached within a modest range of fluctuation. Otherwise a fall in employment and income, once started, might proceed to extreme lengths.[7]

Further on, Keynes again insists:

> But whether or not this psychological law strikes the reader as plausible a priori, it is certain that experience would be extremely different from what it is if the law did not hold. For in that case an increase of investment, however small, would set moving a cumulative increase of effective demand until a position of full employment had been reached; while a decrease of effective demand until no one at all was employed. Yet experience shows that we are generally in an intermediate position.[8]

In fact, we shall see that this *psychological law* can be interpreted from the microeconomic standpoint on the basis of the theory of consumer behaviour and Engel's curves in the case of certain conditions.

1.2 The linearity of the long-run consumption function

Keynes's hypothesis on the consumption function has given rise to different statistical verifications with cross-sectional analysis and time-series analysis. The first consists in observing at a given instant (or over a short period) the consumption of households classed by income level. The second consists in observing the global consumption of households over time. Here we privilege the first approach insofar as it follows micr-oeconomic reasoning and highlights the contradiction evoked in the title of the paragraph. Also, it can be considered as being representative of the behaviour of the "average" consumer. Whatever the case, these analyses show that the Keynesian hypothesis of the concavity of the consumption function *is validated for the short run but invalidated for the long run*.[9]

Observation at a given moment of the consumer behaviour of households, classed by income level, shows that the higher the level of household income, the more the *share* devoted to consumption tends, on average, to decrease: the curve of average household consumption is concave in relation to income, that is to say, it expresses a decreasing marginal propensity to consume (cf. Figure 4.1). Reciprocally, the *rate* of household saving increases with income, expressing an increasing marginal propensity to save.[10] This, then, is the hypothesis put forward by Keynes.

However, if we renew this instantaneous observation at different intervals in time (one or several decades) so that between times the incomes of all households have increased sufficiently, it can be seen that the curve of average household consumption C_1 does not *extend* with increased income but *shifts* upwards and to the right at C_2. Therefore, the average consumption of each class of household ("low-income", "average income" and "high income") increases proportionally with income. In the long-run the household consumption function is therefore not concave but linear, with a constant marginal propensity to consume. Likewise for saving; its rate for each category of household classed by income remains constant on average through time.

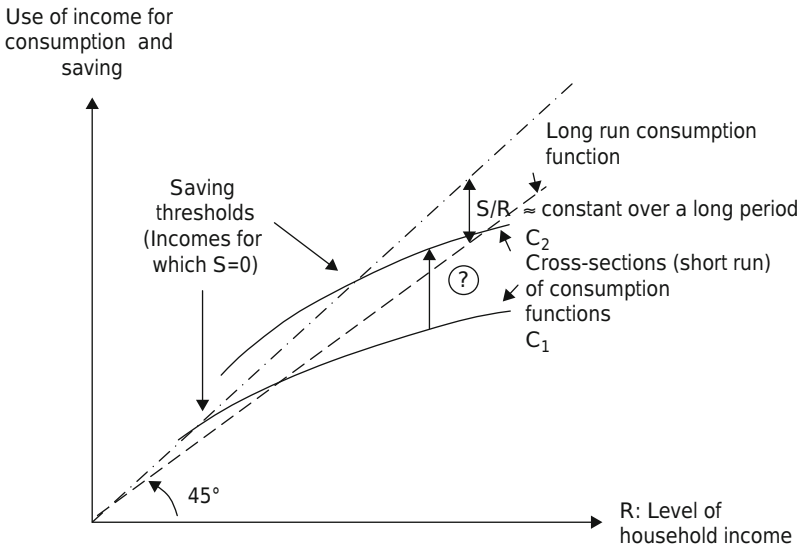

Figure 4.1 The contradiction between cross-sectional (short-run) views of consumption functions and the long-run

The problem to be solved is therefore the nature of the phenomenon that leads to this upwards shift (points on a 45° diagonal at which income is wholly used for consumption and saving) of short-run consumption functions, in parallel to the increase of income over the long-run. In other words, how can we explain, when examining a cross section of household consumption and saving behaviour classed by income level, that the trend of the rate of saving increases with that of income but that, in the long-run, each category more or less conserves on average the same rate of saving despite the fact that all incomes have progressed?

Our hypothesis stated previously is that, in the same way that innovations in the production process allow curbing the decrease of the marginal product of factors (labour and capital) when their quantity increases, innovations in consumer goods permit curbing the decrease of the marginal propensity of households to consume when their incomes increase (incomes analysed by cross section).

However, before examining this hypothesis, let us take a brief look at why the different interpretations that have been developed for and against the Keynesian consumption function do not appear capable of solving the problem in question.

1.3 The wrong answers of this contradiction

1.3.1 Post-Keynesian reformulations[11]

Duesenberry (1949) sought to link cross-sectional consumption functions and long time-series consumption functions by hypothesising the interdependence of consumption behaviours between social groups. Low-income households seek to imitate the consumption of higher-income households: this is the *imitation effect* or *the demonstration effect*. A cross section gives a consumption function with a decreasing average propensity to consume when moving from low-income households to higher-income ones. The reasoning proposed consists in explaining that if the social structure of the community, the distribution of national income between social classes and the average propensity to consume of each social group remain constant over time, then the average propensity to consume of the entire community will also remain constant over the long-run, despite the fact that the average propensity to consume of the consumption function analysed by cross section is downwards sloping.

However, with this reasoning, the constancy of the propensity to consume of different social groups pertains to an entirely ad hoc hypothesis. What makes it possible to think that the wealthiest social group, which in this analysis plays the role of vanguard regarding

consumption, can always maintain the same propensity to consume in line with its increase in income? Why wouldn't the trend observed for the cross-sectional consumption function of this group continue, that is to say, present a decrease of its average or marginal propensity to consume when its income increases? The short-run consumption curve is therefore assumed to shift upwards when incomes increase over the long-run without any justification.

We find the same problem in analyses that make use of the ratchet effect, in which consumption depends on previous consumption behaviours. Thus, according to Brown (1952), in the long-run, consumption is assumed to increase at a certain rate so that the short-run consumption function shifts upwards by maintaining the same marginal propensity to consume in line with the increase of national income over time. Here again, although the long-run marginal propensity is higher than that observed for the short-run, there is nothing to back up the hypothesis of growing consumption with a short-run marginal propensity that stays the same.

Probably, the essentially macroeconomic nature of these Keynesian reformulations leads to obscuring the completely ad hoc dimension of these hypotheses.

1.3.2 Permanent income and life cycle theories[12]

On the other hand, the non Keynesian theories of permanent *income* (Friedman, 1957) and *life cycle* (Modigliani, 1950s and 1960s) rely more on a microeconomic approach to household behaviour. They share the characteristic of considering saving as deferred consumption and not as non-consumed surplus income according to the standpoint defended by Keynes. For Friedman, consumption does not depend on current income, which is liable to vary positively or negatively in the short-run, but on *permanent income*. For him this means that the consumption of a household is a proportional function of its income adjusted for cyclic variations in such a way as to maintain the value of its estate constant. As for the *life cycle* theory, it proposes that the saving behaviour of households depends on their age: they tend to save when young and active and spend their savings when in retirement. However, if we make the hypothesis that consumption is deferred only during the life of the household, without an increase in the financial estate passed on to following generations (a hypothesis that has not been validated by facts), the average and marginal propensities to consume over this period are equal to each other and to 1. Thus we have a linear long-run consumption function,

as confirmed by the observations. (Linearity also exists if the estate passes on increases in proportion to income.)

However, these two theoretical approaches do not lead to understanding the concave (or otherwise affine) shape of the cross-sectional consumption function. If saving is only deferred consumption, why do high-income households save proportionally *more* than those with low incomes? If we make the plausible hypothesis that the same variability exists in the short-run for current income for both high- and low-income households, the theory of permanent income should lead to an equally linear cross-sectional consumption function. Likewise, we should end with a result identical to that of the life cycle theory if we estimate that, overall, the same proportion of "young" households (assumed to save) and "elderly" households (assumed to spend their savings) exists among low-income households and high-income ones.

In brief, the contradiction between the two observations is not explained any more clearly, although the theory of permanent income, by making current consumption depend on previous consumptions, results in an affine shape for a short-run function of the community subject to time-series analysis. Finally, the purpose of the permanent income theory is not to interpret the contradiction between the two observations; rather it tries to demonstrate that the short-run consumption function is unstable and thus that Keynesian economic recovery policies are inefficient. For all that, the facts prove that the consumption behaviours of a society are relatively stable in the short-run, contrary to those of investment.

Other hypotheses of consumer behaviours have been studied, but they are not capable, to our thinking, of solving the problem raised here.

2 The specific role of innovations in consumer goods

To solve this contradiction and to interpret the facts mentioned at the beginning of this chapter, we shall develop our second hypothesis, which is that technical progress has *two highly specific impacts* on economic dynamics that must be distinguished:

- On the one hand, there is the technical progress that takes the form of *innovations in the production process*. These lead as is known to increasing the productivity of factors and of labour in particular[13] and thus of unit incomes (or, in an equivalent way, in curbing the fall in the marginal productivity of factors when their quantity increases). Thus these innovations stimulate the production and supply of companies. (Impact noted ① in the figures of this work.)

- There is also technical progress that takes the form of *innovations in consumer goods*.[14] As will be shown, these modify the arbitration of households between consumption and savings and thus contribute towards increasing the propensity to consume for a given income (or, in an equivalent way, curbing the decrease of households' marginal propensity to consume when their incomes increase). Thus these innovations stimulate the consumption and demand of households. (Impact noted ② in the following figures of this chapter.)

  When mentioning innovations in consumer goods, we are above all talking about *technological innovations that provide new functions to consumers*. This notion has to be distinguished from that of quality or dimension regarding the nature of the materials and the size and design of these goods. For example, the invention of the pocket watch or wristwatch made it possible for everyone to know the time immediately and in any place; however, either of these watches could be made of a base metal or solid gold. The automobile provided new functions in comparison to other modes of transport, but the seats of a car can be made of plastic or leather, and its power can be low or high. The development of watertight liners has led to the massive spread of private swimming pools; however, these can be above ground or excavated and can vary in size. Obviously the distinction between the two notions is tenuous. We include it because companies whose goods provide new functions generally aim at providing them in the form of wide ranges of qualities and dimensions in order to attract as many consumers as possible. So it is the innovations providing new functions that genuinely stimulate household consumption.

  The time needed for these new consumer goods to spread through society – the time needed for households to acquire them and for demand to reach saturation (or, in other terms, for demand to take the form of the simple replacement of the same good) – is highly variable and depends on their attractiveness and the average level of their prices.

Let us see how this hypothesis can be justified from the microeconomic angle.

2.1 The effect of these innovations on the consumption utility function

According to the theory of utility and consumer behaviour, the utility function generated by growing quantities of a given good is concave:

the total utility supplied increases with the quantities of this good though less and less rapidly, implying a decreasing marginal utility. Likewise, the utility function generated by growing quantities of two goods takes the shape of a concave utility surface. For a given price ratio between goods, we can define a consumption-income curve (also called expansion path of the consumer) on this utility surface. Each point of this curve corresponds to a combination of goods providing maximum utility for a given level of income. This reasoning can be expanded to include any number of goods (see Figure 4.2).

However, this expansion path of the consumer has drawn little attention in microeconomics despite the fact that it is essential for understanding consumer behaviour and clarifying debate on Keynesian macroeconomics. Transposed on a plane, this path represents the income utility function for the purposes of consumption.

For a given number of goods (different from each other), n, all of whose characteristics remain perfectly constant, and for equally constant price ratios between these n goods, the total utility function produced by an increasing income assigned to their purchase will be stable and concave and thus the marginal utility function will be stable and downwards sloping.

However, if the number of goods supplied (diversity and characteristics) increases from n to $n + j$, the total and marginal utilities supplied by the same level of income devoted to their consumption will be higher, provided that the usual hypotheses of consumer behaviour are validated; in particular, the goods are desirable and preferences are non-saturated and convex. This results in an upwards shift of the total and marginal utility curves of income assigned to consumption when the diversity and characteristics of the goods offered increase.

This means that if we examine the behaviour of households at a given instant (or in the short-run), we can consider that the *diversity* and *qualitative characteristics* of the consumer goods (and services) available to them are strictly *invariable*. This leads us to the first result: *consumption can therefore be considered at a given instant (or in the short run) as representing a global but divisible good with invariable characteristics*. However, over the long-run, this is no longer possible due to the emergence of innovations in goods.

Furthermore, since all the individual utility functions of income assigned to consumption are concave and stable, the global (or aggregate) utility function of a community whose population remains constant is also concave and stable.

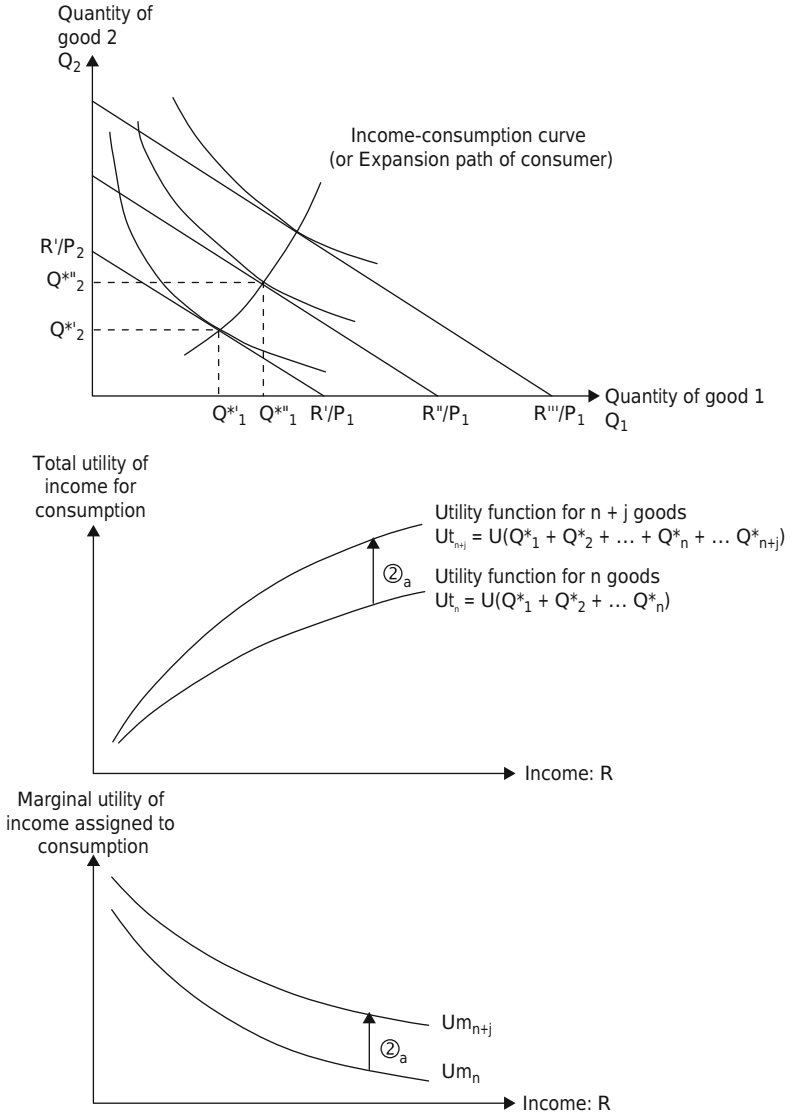

Figure 4.2 Effect of innovations in consumer goods on the income utility function assigned to consumption

Note: Q^*_i = optimal quantity of good i for the consumer, taking into account the price ratio between the different goods and their income R.

2.2 The effect of these innovations on the trade-off between consumption and saving

This income utility assigned to consumption must be placed alongside its utility for the purpose of saving, given that income can be put to two uses: it can be consumed or placed in reserve (i.e. saved). However, saving is not only deferred consumption whose utility only emerges the day it is sacrificed. Saving has a utility in itself, which is immediate and not only for the future consumption it will allow. It is a reserve of value that provides comfort, opportunity and security in the life of households. It facilitates current transactions and speculation as perceived by Keynes. It allows households to hold reserves for the possible acquisition of future goods, and it also allows them to face unexpected expenses, satisfy whims and sustain hard blows. It is a kind of multipurpose insurance against the uncertainty of life. Expressed trivially, it is better to have a little money put by (in savings) than to be obliged to hang on by one's fingernails when faced by the least expense! This means that saving cannot be reduced to a sacrifice in relation to an immediate consumption since it is a sacrifice compensated financially in the form of interest.

That being said, the utility function of income for saving is also concave, for the same theoretical reasons as for goods, and thus the marginal utility function is downwards sloping. This means, all other things being equal, that variables other than income liable to influence the volume of saving (real interest rate, level of uncertainty regarding the future, the size and structure of the estate owned, etc.) remain constant.

The optimal trade-off between consumption and saving in the utilisation of income will be reached at the point where its marginal utility for consumption is equal to its marginal utility for saving (see Figure 4.3).

If income increases, all other things being equal, the theory of consumer choice alone cannot be used to determine a priori which good (or service) will increase proportionally more or less quickly than income. It can be determined only by observation, as Keynes suggested. However, cross-sectional analysis of income presents without ambiguity a concave consumption function and, conversely, a convex saving function.

We obtain a second important result: *at a given instant* (or in the short-run), *consumption* taken as a whole is therefore a *priority good* of income elasticity (ε_r) from 0 to 1 in the meaning of the theory of consumer behaviour, whereas *saving* is a *luxury good* of income elasticity

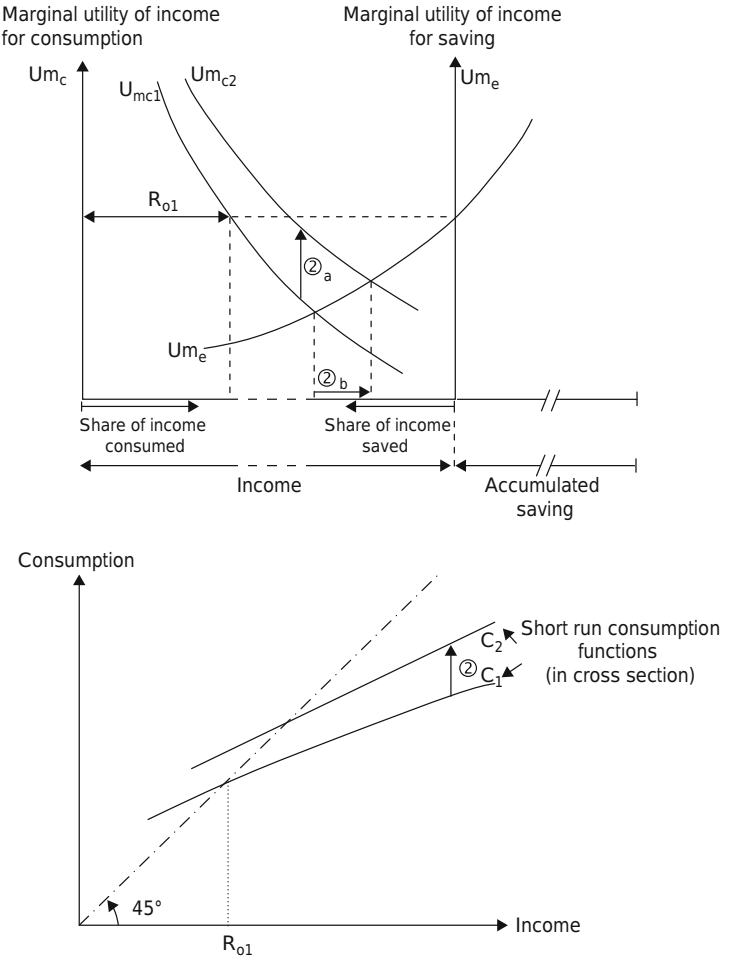

Figure 4.3 Effect of innovations in consumer goods on the propensity to consume

②$_a$ Increase of marginal utility of a given level of income for consumption under the effect of innovations in consumer goods between periods 1 and 2.

②$_b$ Increase of (average and marginal) propensity to consume a given level of income under the effect of innovations in consumer goods, all other things being equal.

Note: The trade-off between consumption and saving is determined at the point where the marginal utilities are equal. The effect of a variation of income on the propensity to consume, all other things being equal, can be represented graphically (as this figure does) by changing the distance between vertical axes Um_c and Um_e (like an accordion). This is done by considering that the curves of marginal utility of consumption and saving remain linked to these axes. It is then possible to consider a contraction of income until saving threshold R_{o1}, below which the consumer will dissave (in period 1).

higher than 1. However, in the long-run, this microeconomic interpretation is no longer acceptable due to the emergence of innovations in consumer goods (new goods and/or improvements in the quality of existing ones). Thus, from a strictly economic standpoint, it is possible to explain Keynes's famous *fundamental psychological law*, i.e. the *concavity* of the short-run consumption function.

Now, if the diversity (or characteristics) of consumer goods (and services) increases over a long period, driven by innovations, this will lead to an upwards shift of the marginal utility function of income assigned to consumption. Also, all other things being equal, if we reason specifically with an unchanged utility function of current saving and constant real prices of consumer goods and saving (interest rate), the propensity to consume a given income increases, leading to an upwards shift of the individual and community household consumption function.[15]

We therefore arrive at a third essential result: *the shift upwards and to the right (along a 45° slope) of Keynes's consumption curve (in cross section or the short run) over the long run can be explained by innovations in consumer goods*. Likewise, *if consumers' tastes (i.e., their indifference maps) do not remain stable through time and change*,[16] giving rise to interrogation for economists, *the basic reason is due to the innovations affecting consumer goods*.

2.3 Other determinants of consumption behaviour

Other variables are recognised or cited as liable to influence consumption and saving behaviour. We provide several examples below without pretending to be exhaustive.

2.3.1 The variation of the production-consumption of public goods

The decisions taken by the State regarding the production of public goods (and thus consumption because they are supplied in bulk form to households) shifts the *cross-sectional* consumption function: downwards in the case where this production is decreased and upwards if it is increased. (In this respect, it should be underlined that increasing the production-consumption of public goods [and thus tax and social contributions] is not more detrimental to that of private goods than the spread of automobiles and televisions was for traditional private goods such as food and clothing.[17] Such a decision taken by the State globally increases the propensity of society to consume.)

2.3.2 The structure of income distribution in society

The concavity examined and validated previously of the consumption function (in the short-run) has a major consequence: the maximum

consumption of a society will be reached if income is distributed in a perfectly egalitarian way. Indeed, in comparison with egalitarian distribution, every time an inequality in distribution is introduced (such that the rise in income of certain individuals is offset by the decrease of that of others), the increase of consumption that will result from such increase in incomes will be less than the decrease in consumption of those that diminish.[18] Therefore the more the distribution of incomes between households is unequal, the lower the average propensity to consume of society taken as a whole will be. Conversely, the more this distribution of income becomes egalitarian, the greater the propensity of society to consume will be, all other things being equal. However, the structure of income distribution between households does not affect the shift in the *cross-sectional* consumption function of households, only the global consumption of society.

2.3.3 The value of assets

The variation of the value of assets can lead to a shift of the *cross-sectional* consumption function. More specifically, if the ownership of securities is widespread among the public, an increase in their price will lead to a reduction of the marginal utility of saving of households and thus increase their propensity to consume. This is what is called the wealth effect, henceforth incorporated in the analysis of consumption behaviour. However, if we reason in the long-run, we can consider that these prices follow the evolution of companies' profits – that is, society's stock of productive capital or the trend of economic growth – thereby mostly neutralising the effects. This propensity to consume can also be modified by the value of non-financial assets (property, works of art, antiques, etc.). However, the effect of the latter can be neglected, firstly, because the effect on the propensity to consume is less direct with this type of non-cash asset; secondly, because although an increase of the value of property (the most important asset) makes its owners wealthier, it is also reflected in the rent paid by their tenants and thus their purchasing power.

2.3.4 Real interest rates

Classical economists consider the real interest rate as being the fundamental determinant of the level of saving and thus, conversely, of consumption. For them, this rate is the *price of abstinence*, that is to say, the renouncement of immediate consumption. Keynes criticised this standpoint by explaining that this rate acts less on the volume of saving than on the form it takes: placed (for a more or less long-

term) or not placed (i.e. it remains in cash form). For him, this rate is above all the *payment made for renouncing liquidity*. This is also our position (cf. §2.2). Furthermore, if the interest rate were (as the classical economists say) only the price of abstaining from consumption, the cross-sectional consumption function should not be concave but linear (with an income elasticity equal to 1; cf. §1.3.2). Thus there is an obvious contradiction with the facts. Whatever the case, given that we are reasoning in the long-term, it can be considered that this rate is constant and thus without effect on the shift of the household consumption function.[19]

2.3.5 Factors of uncertainty

Uncertainty is one of the major variables taken into account in studies on changes in consumption and savings behaviour. Nonetheless, in the long-run, this variable is corrected and therefore becomes neutral with respect to the consumption function. That being said, policies implemented to reduce factors of uncertainty burdening households, such as the introduction of obligatory insurance for individuals (health, disability, old age, unemployment, etc.) and for goods (fire, accidents, etc.), have the effect of limiting the utility of saving for the individual coverage of these risks. This therefore contributes to increasing the propensity of society to consume, all other things being equal. The contrary would occur if these policies were revoked.

2.3.6 Demographic factors

The variation of the population of a country (birth rate, life expectancy, immigration and emigration, etc.) obviously affects its global consumption, but it does not in itself affect the cross-sectional household consumption function. On the contrary, a modification of the internal structure of society (proportions of young and elderly populations, socio-professional composition, etc.) will be susceptible to have an effect, but a priori in a way difficult to determine. What is more, drastic changes in this structure are required for effects to become significant.

2.3.7 Natural and cultural factors

Consumption and saving behaviours around the world exhibit quite pronounced differences, which are most often due to different natural or cultural contexts. Consumption is not the same in the Tropics or within the Arctic circle or, remaining in the same latitude, between the cultures of China, India, Morocco, Mexico and Florida. This is true for food and

many other commodities. Thus in France, the rate of household saving (the well-known nest egg) is traditionally high. In other words, the *indifference map* of individuals varies according to their physical and cultural environments. However, these contexts do not, in themselves, affect the shift of the household consumption function. Otherwise, for such a shift to occur, they would have to undergo radical modifications that in turn would require explanation.

2.3.8 Available free time

If we take Becker's hypothesis, according to which time is necessary in order to produce but also to consume, the propensity of individuals to consume can therefore be considered as being positively correlated with available free time, ceteris paribus.[20]

In conclusion, if we reason in the long-run, most of these variables (or factors) appear to have little or no impact on the shift of the cross-sectional household consumption function. Thus, apart from a decision by the State to vary the production-consumption of public services, the main determinant of this shift appears to us to be technical progress via the innovations that it implements in private consumer goods and services.

3 The relative effects of technical progress on growth and the use of factors

3.1 Interaction between the behaviours of production and those of consumption

The previous paragraph allowed us to show, on the basis of microeconomic fundamentals, that innovations in consumer goods modify the trade-off of a household between consumption and saving and therefore increase its propensity to consume a given level of income; that is to say, it stimulates its consumption, all other things remaining equal. These individual behaviours can be aggregated additively so that this reasoning can be applied to a whole society. Moreover, it is known that innovations in the production process increase the productivity of factors and thus their unit incomes; that is to say, they stimulate the production of companies and the entire economy. However, there is no reason a priori why these two aspects of technical progress bring about perfectly symmetrical effects, meaning that any increase in the productivity of factors (and their unit incomes) will correspond to an identical increase in consumption.

Let us represent these effects linked to technical progress and examine their consequences on economic growth and on the use of factors of production, especially labour.

On the one hand, companies produce capital goods and consumer goods. Symmetrically, they distribute income for labour and capital (we shall leave out property rental) of an amount equal to that of production (of the added value produced). On the other hand, the households benefiting from these incomes arbitrate their use between consumption and saving. We saw previously the reasons that lead households to save. However, companies do not invest when there are plenty of available savings. They invest only if they know there are markets for their products, that is, as a function of household consumption dynamics, even if they seek to anticipate and stimulate it by investing in innovation. It is known that the demand for factors of production, in this case investment, *derive* from household demand for consumption upstream of which companies attempt to respond. Furthermore, we know that, over the long-run, investment (I) adjusted for cyclic variations represents a relatively constant proportion of consumption (C) or global production (Y): I/C or I/Y ≈ constant. (In other words, this means that the average propensity of society to consume, C/Y, remains relatively constant over the long-run.)

If the reasons that lead companies to invest do not coincide with those that lead households to save, from the accounting standpoint, equality is nonetheless always maintained between household saving (S) and investment by companies (I), given that the latter integrate gross fixed capital formation and inventory variation. However, the latter variable is used by companies to align production with the consumption and saving behaviour of households. An increase of their consumption *less* than proportional to that of incomes (meaning an increase in their rate of saving) will result in increased inventory (unused raw materials, unsold finished and semi-finished goods) held by companies, thus leading them to lighten their production programme for the following period. The reverse is true for an increase of consumption *more* than proportional to that of income. In other words, this means that if the marginal propensity to consume, dC/dY, becomes lower than the long-run average propensity to consume, C/Y, the rate of economic growth will decrease; if dC/dY remains equal to the long-run C/Y, the rate of growth will remain unchanged; lastly if dC/dY becomes higher than the long-run C/Y, the rate of growth will increase.

That being said, let us now examine the relative effects of technical progress between two instants (or short-term periods) 1 and 2.

Figure 4.4 shows these relative effects from the standpoint of marginal values. This figure is built using the previous in-depth analyses of labour demand (cf. Ch. 3, Figures 3.7, 3.9, 3.10). On the one hand, innovations in the production process between periods 1 and 2 increase the productivity of factors, in this case labour, resulting in an increase in the long-run equilibrium wage rate from w_{e1} to w_{e2}. On the other hand, innovations in consumer goods result in a proportionally more or less steep increase in consumption in relation to unit incomes (wage rate). In other words, the elasticity of consumption in comparison to unit incomes[21] can be lower than, equal to or higher than 1, which will reflect on the derived demand for labour. For an invariable demographic structure, the global volume of labour hired by companies, L_e, can decrease, remain the same or increase between periods 1 and 2. Thus, if consumption increases at the same pace as labour productivity (elasticity c/r = 1), the global volume of the labour hired will remain the same: $L_{e2} = L_{e1}$. If consumption increases more slowly, it is $L_{e2} < L_{e1}$; and if it increases faster, $L_{e2} > L_{e1}$.

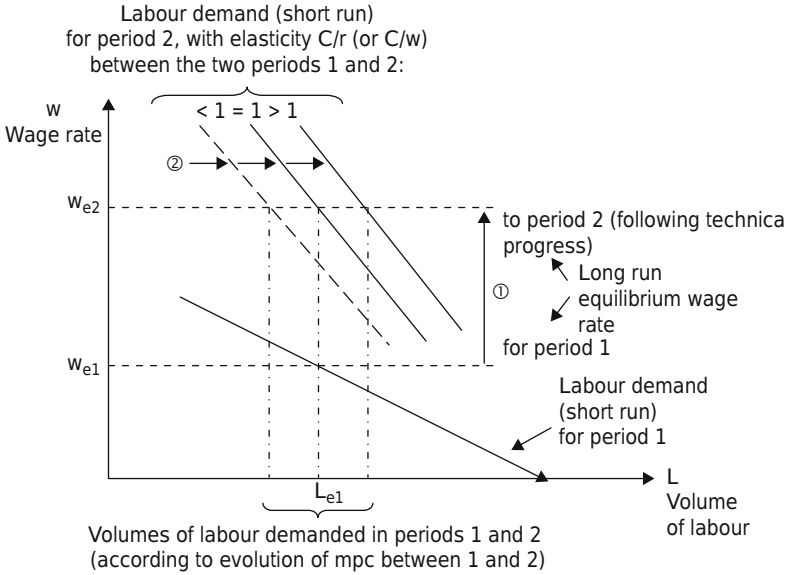

Figure 4.4 The relative effects of technical progress on labour demand

① Effects of innovations in the production process on the productivity of labour (and thus on the long-run equilibrium wage rate).
② Effects of innovations in consumer goods on the propensity to consume (and thus on the volume of labour demanded).

Figure 4.5 shows a production/consumption diptych with the same relative effects between the two categories of innovation from the standpoint of total (and real) values. The behaviours of companies can be aggregated in a global production function (GNP), Y, and those of households in a global consumption function, C, given that GNP corresponds to the global income of the society in question. I_1 and I_2 represent the global gross investment (corrected for cyclic variations) for each of the two periods, 1 and 2. This gross investment corresponds to the consumption of fixed capital (real depreciation) and the net investment corrected for cyclic variations. It also corresponds to the aggregation of the fixed costs of companies that we assume have limited themselves to the cost of capital. The macroeconomic equality between saving and investment means that $I_1 = S_1$ and $I_2 = S_2$. Over a long period, we saw that the ratio I/Y is relatively constant and therefore ratios S/Y and C/Y are constant, too. On the right-hand part of Figure 4.5, the two dashed lines of slopes w_{e1} and w_{e2} represent the net average productivity of labour for each period, that is, the long-run equilibrium wage rate (cf. Ch. 3, §2.3). (The change of slope, from w_{e1} to w_{e2}, expresses the effect ① on the average productivity of labour of innovations in the production process). Figure 4.5 presents the case of consumption dynamics (effect

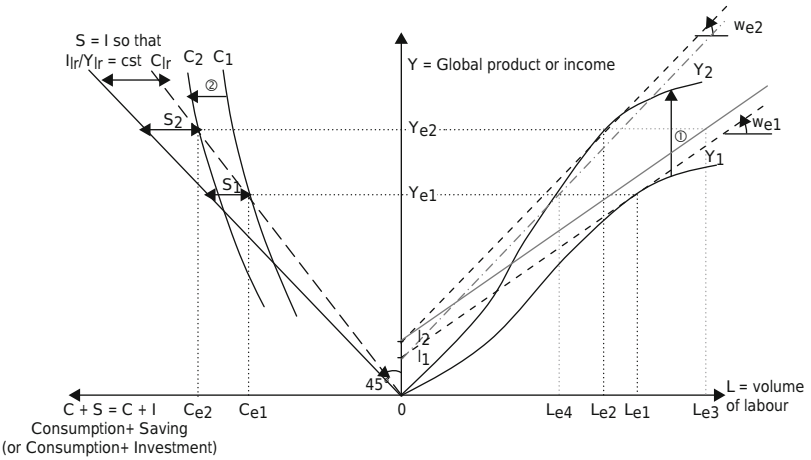

Figure 4.5 The relative effects of technical progress on production and consumption

① Effects of innovations in the production process on labour productivity and thus on the long-run equilibrium wage rate.
② Effects of innovations in consumer goods on the marginal propensity to consume and thus on the volume of labour demanded.

②), between periods 1 and 2, that is lower than that of labour productivity. The effect of this situation is to slow down the development of production Y, on the one hand, by curbing gross annual investment I and so the capital stock, and on the other hand, by reducing the volume of labour hired by companies to satisfy global demand C + I: $L_{e2} < L_{e1}$.[22]

3.2 The implications for the theory of growth

Let us examine the two following extreme situations on the basis of Figures 4.4 and 4.5 and the reasoning set out above (in §2).

- Let's assume that there are innovations in consumer goods (effects ② in Figure 4.5) but none in the production process. What will happen? Since the consumption function is in C_2, production will develop until Y_{e2}, due to the efficiency of factors in period 1. Since I/Y is relatively constant, gross investment will increase until I_2. As the net average productivity of labour corresponds to w_{e1}, the volume of labour hired by companies will therefore increase until L_{e3} (by absorbing existing unemployment or by extending working time). In this case we obtain "horizontal" economic growth without increasing labour productivity. However, this reasoning is valid only if the assumption of factor productivity remains constant when production changes from Y_{e1} to Y_{e2}. However, if we reason in the long-run, this will no longer be the case due to the increasing scarcity of factors (raw materials, energy, labour and land). If the innovations in goods mainly concern services calling almost only on labour, "horizontal" growth can occur, at least in developed countries, since labour in these countries is no longer a limiting factor.[23] On the contrary, if the innovations concern physical goods, raw materials and energy may become limiting factors, and their cost will rise. The effect of this in time will curb household consumption (by decreasing ratio Y/I and thus Y/E).
- Now let's assume the reverse situation: we have innovations in the production process (effects ①) but absolutely none in consumer goods (not even improvements in the quality of existing goods). In this case, the consumption function will remain in C_1. Likewise, investment and production remain in I_1 and Y_{e1}, respectively, but with a net labour productivity equal to w_{e2}. The volume of labour hired will therefore decrease in L_{e4}. Production between the two periods 1 and 2 will be zero,[24] but a substitution of capital for labour will occur due to technological innovations. However, we may obtain non-zero economic growth: consumption could increase very slightly if the decrease in the volume of labour hired results in a uniform reduction of working time

and if we make the (plausible) assumption of a positive correlation between consumption and available free time. However, consumption could decrease if the lower volume of labour results in layoffs and the augmentation of disparate incomes (cf. Ch. 5, §3).

Admittedly, these two extreme cases are improbable in reality: one cannot have innovations that, over time, have an impact in only one of the two domains, factor productivity or the propensity to consume. But they are useful from the analytical standpoint.

Finally, in the long-run, interaction between consumption behaviour and production behaviour will be complete.

- Innovations in the production process loosen the constraint of scarcity of factors by increasing their productivity and their unit incomes;
- By modifying the trade-off between consumption and saving, innovations in consumer goods increase the propensity of households to consume their income;
- This productivity of factors and this propensity of households to consume determine together
  - the global level of consumption and thus the level of economic activity and the global income of society;
  - the global volume of factors of production deployed by companies.

This analysis of the effects linked to innovations in the production process and in consumer goods on increasing factor productivity and consumption dynamics, respectively, converges with and completes *Solow's neoclassical growth model* in which, in the long-run, only two variables are involved: demography (here our reasoning is based on an invariable demographic structure) and technical progress.[25]

3.3 Specific implications for labour

According to the impact linked to these two aspects of technological progress, the global volume of labour hired by companies can increase or decrease in the long-run, all other things being equal (in particular, with an invariable demographic context). Regarding the supply of labour by households, we can consider two hypotheses:

- If we reuse the basic neoclassical hypothesis according to which all workers (employees and independent workers) can optimise their choice regarding labour supply (cf. Ch. 2, §1), an increase in the global volume of labour should result in greater individual preferences in

favour of labour. (Indeed, if this global volume increases, it expresses that households have a very strong desire to consume and thus a desire for income). Conversely, a reduction of this global volume of labour should result in greater individual preferences in favour of leisure. We can deduce from this that when no innovation in goods is being distributed on the market to consumers, the curve of individual labour supply should slope downwards.

- On the contrary, if we consider, more realistically, that most employees (about 90% of the active population of industrialised countries) are not able to optimise their individual choices regarding labour supply for the reasons mentioned previously (cf. Ch. 1 and Ch. 3, §1), then the variation of the global volume of labour hired will emerge in the social and political arena. Two cases are possible:
  1) If the global volume of labour hired by companies increases, the overtime worked by employees will increase, or else the unemployed (if any) will be absorbed provided that the additional cost of overtime is sufficiently high to encourage companies to recruit job seekers. Immigration may be favoured or a rural exodus encouraged in the case of countries with an excess agricultural and rural population working in small unproductive structures.
  2) On the other hand, if the global volume of labour tends to diminish, social and political discussion will start between the social partners and the State to reduce working time. We shall focus more on this aspect in Chapter 5.

4 The irregularity of growth

The previous developments allow interpreting the irregularity of economic dynamics, especially short business cycles and long-term cycles, known as Juglar and Kondratieff cycles, respectively. The first are linked to the asymmetry of power between employers and employees that prevails in the sharing of gains in productivity between profits and wages and between investment and consumption. According to Schumpeter, the second results from major innovations that occur in clusters through time. We shall examine their relative effects on consumer goods and the production process.

4.1 Juglar cycles

4.1.1 The role of innovations

In Chapter 3 we saw that the power of employers to modify working time and thus influence the volume of labour supplied and the wage rate

results in cyclic crises of overproduction if not opposed by a collective reaction by employees or State intervention.

However, these crises and their recurrence cannot be considered unless, in parallel, there is a flow of innovations in the production process leading to increased labour productivity. If these innovations were absent, these crises would certainly be possible theoretically (as long as the economy is more buoyant than the minimum subsistence level). But in this case, employees would see their wage rate fluctuate around a level that remained perfectly stagnant in the long-run. As for profits, they would alternate by balancing with losses. Such a scenario is hardly realistic and cannot be envisaged unless one goes back to the dawn of capitalism. For it to occur, employment contracts should not include any clauses on working time or wage, as both would be variable. Also, it can be assumed that in the long-run employees and employers would agree to stabilise wages in order to correct cyclic fluctuations which, in the long-run, profit neither party.

Likewise, these crises can be considered only if innovations exist in consumer goods; otherwise, if they were totally absent, economic growth would become totally slack if not negative. However, if this were the case, it is difficult to see what might drive each company to seek the highest possible profit. Furthermore, if these are new branches undergoing expansion – that is to say, producing goods whose income elasticity is greater than 1 and thus are most affected by these cycles (positive in the expansion phase, negative in the depression phase), the emergence of these innovations would not suffice in itself to trigger these cyclic crises.

Thus it can be said that this cyclic process stems from the power held by employers, in a context of economic growth, not to fully reflect gains in productivity due to innovations in the production process in the wage rate. (Account, too, must be taken that employers can also modulate the volume of labour supplied.)

4.1.2 The scenario of short-run business cycles

After these different developments, let us briefly build a complete scenario of these short-run business cycles by including prices and by successively examining how equilibrium prices are reached on the markets for commodities and labour.

- *The trough of the crisis*. We shall start from this situation in our explanatory scenario. Throughout the previous depression, companies froze their investments, including those necessary to replace worn-out and obsolete capital stock. Productive capacity has shrunk to reach

the saving threshold: the point at which national income is wholly consumed by households. Companies therefore have no reason to reduce their production still further. The economy has stopped shrinking. Since the entire product of labour is consumed completely, from the microeconomic standpoint it can be considered that the real wage rate has reached the *gross* average product of labour, i.e. the shutdown point of using the labour factor in companies. The losses of the latter are globally equal to their fixed production costs.

- *Recovery*. Since the economy has stabilised at its low flow point, sooner or later companies have to start reinvesting, if only to renew at least partially their worn-out or obsolete equipment. Activity therefore recovers in those sectors that produce capital goods; employment begins to increase, likewise working time, leading to a symmetrical increase in the income distributed (i.e. an augmentation of national income). This increase in incomes in turn leads to an increase in demand for consumer goods (the demand curve for goods shifts to the right). Companies that allowed their capital stock to stagnate during the previous depression (some companies will have disappeared during this phase) cannot respond *immediately* to this greater demand, generating tension in the prices for consumer goods. (The same phenomenon may occur in sectors for capital goods when demand for them recovers.) Simultaneously, the wage rate will diminish if its nominal rate remains unchanged.
- *Expansion*. This increase in consumption in turn stimulates investment, and the recovery in economic activity results, symmetrically, in an increase in the income distributed, which in turn fuels economic activity and so forth. The fact that in this expansion process (initially linked to the recovery of investment), the increase in demand *precedes* that of supply exerts pressure on the prices of consumer and capital goods and causes them to rise. However, the investments made by companies generally incorporate technical innovations that lead to gains in productivity. But the asymmetry of power prevailing in the relation between employers and employees allows the former to forego passing on these gains in productivity to the wage rate (or else only passing them on partially). This is further aided by the fact that the unemployment that developed during the previous depression phase acts as a barrier to impede increases in the nominal wage rate. Consequently, in the sharing of the added value generated, profits increase more quickly than wages. We saw previously that this disparity between the evolution of profits and wages means that production capacities will tend to increase more rapidly than

consumption. Therefore, although the increase in demand precedes that of supply at the start of the expansion phase, the situation is modified in what follows. This can be seen in Figure 3.10 (Ch. 3). During the recovery, the goods demand curve shifts first to the right followed, after a certain time lag, by the supply curve. Then, during the expansion phase, the speed of displacement of the supply curve will gradually accelerate until it overtakes the goods demand curve.

- *The crisis*. This occurs precisely when the supply curve has caught up with the goods demand curve; that is to say, when prices start falling, signalling relative overproduction (and underconsumption).[26]
- *The depression phase*. Confronted by poor sales, companies reduce their production and, above all, freeze their investments. Workers are laid off, and working time tends to shorten more or less in all companies. The income distributed, especially in the sector producing capital goods, diminishes, in turn weakening demand for consumer goods. The result is that companies again reduce their production, their workforces, the income distributed and so forth.

  In this depression process (initially linked to the freeze in investments), the reduction of demand *precedes* that of supply. This exerts downwards pressure on the prices of capital and consumer goods. However, each contraction of income distributed in this depressive spiral corresponds to a lower reduction of consumption, to such an extent that the depression is progressively damped. Thus, even if companies continue to freeze their investments, a point is reached (at the saving threshold) when all the income distributed is consumed. Companies no longer have any reason to reduce their production still further. The trough of the crisis has been reached, and economic activity slowly begins to pick up since companies must invest sooner or later, if only to replace their obsolete equipment. And so on.

During these phases of expansion and depression, the real wage rate varies in the opposite direction to that of the prices for goods and production (see Ch. 3, §4).

4.2 Kondratieff waves or supercycles

According to Schumpeter, long cycles, known as Kondratieff waves, are due to major innovations that occur in clusters through time and that then give rise to multiple derived innovations. This interpretation is generally accepted by most economists. However, we explained previously that

these innovations have two fundamentally different impacts on economic dynamics. One concerns the behaviour of producers with the adoption of innovations in the production process, improving the productivity of their production factors. The other concerns the behaviour of consumers with the adoption of innovations in consumer goods, leading to an increase in their propensity to consume. But these innovations possess two quantitative aspects. On the one hand, each category of innovations has a more or less significant impact on factor productivity and on the propensity of households to consume. Thus labour productivity can increase more or less as a function of the period considered due to the efficiency of the innovations implemented; likewise for the propensity to consume. On the other hand, these two categories of innovation have a relative impact on each other. Provided that the limiting effect of factor productivity is not too marked (and of course that no tangible barriers exist to hinder the capacity of economic actors to carry out their business), economic growth depends on innovations in consumer goods.

Nonetheless, generally speaking, growth alone does not create or destroy jobs. It is the relative effects of innovations on the propensity of households to consume and on labour productivity that cause employment to swell or subside (for the same working time and demographic structure). Next, it appears to us that the diffusion of the two categories of innovations occurs at different rhythms. Competition drives companies to innovate constantly in the production process to lower their costs and remain competitive. They can also innovate in consumer goods for the same reasons. However, consumers are not under the same competitive pressure as producers to adopt innovations. The propagation of new consumer goods implies no imperative obligation to purchase, and thus their adoption can occur over long periods. Experience has shown that it is the introduction of goods offering new functions which tangibly increases the propensity of households to consume. Thus television revealed itself to be a major supplement to the written press and radio to such an extent that after one or two decades, most households owned a TV. But the different innovations to which it was later subject (colour, flat screen, etc.) meant that new TVs simply replaced used models still in service. Thus these innovations merely accelerated the replacement of an existing number of TVs. This is so, it seems, for all consumer goods. But as much as the appearance of new functions leads to an additional volume of labour to be produced, this is far from being the case for innovations that improve existing goods. It therefore seems to us that the two phases of fluctuations over the long-term, that of dynamic growth and of slow growth, correspond to the diffusion of major innovations in

consumer goods, that is to say, markets for household appliances with new functions, followed by relatively stagnant replacement markets. This interpretation is, moreover, congruent with the evolution of prices that highlight the existence of these long cycles. Indeed, although consumption is strong, it drives consumer prices upwards. If consumption is weak (low propensity to consume), prices will fall.

Now, if we consider that major innovations are introduced discontinuously and grouped through time, is it conceivable that this occurs cyclically, with regular intervals lasting about fifty years? Admittedly, we can always conjecture a kind of dialectic of innovations in which they emerge only in periods of slow growth, when the economic exploitation of previous innovations has become exhausted and competition more severe, obliging companies to seek still more efficient production procedures and to design new consumer goods. To be honest, this all seems very hypothetical. So should we consider that this cyclic rhythm lasting half a century on which no unanimous agreement exists between historians and economists specialised in these fluctuations is simply due to fortuitous coincidences? The answer is probably.

Furthermore, the presentation of the period between the two world wars as the period of slow growth of a long cycle is debatable. Firstly, the traumatism of World War I with its immense toll on human life weighed heavily on the European economy. Secondly, the Great Depression of the 1930s acted as a brake on the average growth of the period, since the United States in the 1920s presented all the characteristics of strong growth comparable to the Post-War Boom in France.

5 Comparing the facts

When comparing our hypothesis on the dual impact of technical progress with the facts, we will start from the beginning of the Industrial Revolution. Nonetheless, we will above all focus on the period following World War II during which two very different phases, from the standpoint of growth and employment, succeeded each other. Furthermore, we will take France as our example, given that the characteristics highlighted can be found in most West European countries.

5.1 The beginnings of the Industrial Revolution

We saw that the two central hypotheses of this book were set out in the interpretation of the increase of working time at the beginning of the 19th century (Ch. 1, §3.1.; Ch. 2, §1.3). These hypotheses are not mutually exclusive.

Firstly, we know that throughout the 19th century and the first half of the 20th up to World War II, the economy was affected by cyclic fluctuations (known as Juglar cycles) lasting on average eight to nine years, well characterised by historians. During the expansion phase, economic activity developed, employment rose, working time increased, prices increased and, above all, the profits generated by companies (likewise their investments) rose more quickly than wages. After four or five years, this expansion resulted in a crisis of overinvestment and overproduction with a corresponding fall in sales prices and the curtailing of investments. This was followed by a depression phase during which phenomena occurred that were the reverse of those of the expansion phase. Historians have also shown that the real wage rate did not fall during depression phases in which labour demand decreased and unemployment rose; it actually increased and often more so than in the expansion phases of the 19th century. However, it was precisely during expansion phases that workers organised offensive strikes to claim shorter working times to increase wages and regulate these cyclic fluctuations. Thus, during the first half of the 19th century, when employers undoubtedly enjoyed the most absolute power they have ever had, it is likely that the pressure to extend working time during expansionary phases in order to increase profits resulted in a reduction of the real or nominal wage. This was corroborated by the actions taken by workers' representatives at the French Assembly to defend the decree of 2 March 1848 which limited working hours. Thus, Pierre Leroux explained that the daily wage of a worker had risen from about 1 franc before the Revolution of 1789 to 1.15 francs in 1848 in manufacturing centres, whereas during the same time the cost of living had risen by far more. He denounced "*the fatal law of the wage. The number of workers is always too great to satisfy demand, since the demand for all production is made by a small number of persons who own the net income.*"[27] In other words, the added value generated was mainly taken by those who owned the capital, knowing that at the beginning of the Industrial Revolution, the working population profited little from mass production, since it was initially purchased by the lower middle and middle classes (artisans, shopkeepers, industrialists, the liberal professions, landlords, etc.). As for Agricol Perdiguier, a worker and ardent Catholic, he explained that if working time was extended, workers would not earn more money but would actually earn less. In the preamble to his speech, he mentioned a parable by Lamennais, taken from his book *Paroles d'un croyant*, published in 1834, which explained that a "wicked man" would become even richer by making workers believe that they would earn more by working more

rather than by chaining them to their posts, in other words reducing them to slavery. *The crux of the question is there, Sirs, there completely*, he concluded. *The more a worker works, the less he earns; the less he earns, the less he consumes; the less he consumes, the more he suffers, and the more he suffers, the closer we get to revolutions*. Not long afterwards, he again declared: *The more a worker worked, the less he earned; the less he earned, the longer his days became: by doing away with even Sundays and holidays, and all that increased his misery still more*.[28] Most economists have never taken these words into account. However, we saw previously (Ch. 3, §3.1) that such a phenomenon no longer appeared realistic once workers began to organise their resistance and explicit and implicit norms and standards of remuneration were established. However, it was not impossible in the absence of such resistance and standards.[29] Obviously, it was during phases of expansion that these interminable working days that lasted fifteen hours were reported by observers in the 1840s. Nevertheless, this approach taken by capitalists to generate ever greater profits by lengthening the working day could not last indefinitely for it inevitably led to crises of overproduction.

Secondly, we saw that working time increased throughout the 18th century and at least during the first half of the 19th (cf. Ch. 1, §3.1). This duration has been corrected for cyclic fluctuations. According to the historian and economist Jan De Vries, this increase in working time stemmed from the higher consumption of households eager to obtain the new goods that first became available to the middle classes in towns and then to the rest of the urban population and, finally, to the inhabitants of remoter rural regions.[30] First, regarding food, exotic products were introduced such as cane sugar, coffee, tea, cocoa and the chocolate produced from it. In the sector of textiles (clothing, bed linen, etc.), cotton, linen and, more rarely, silk, completed or replaced more traditional fibres such as wool and hemp. From the 17th to the 19th century the whole population had greater choice in clothes with more embellishment, as testified by inventories made after death; likewise for household kitchen utensils and table cutlery. Metal cooking utensils (tin, copper, etc.) and china and porcelain crockery replaced or completed wooden and earthenware objects. Houses improved and became better equipped while furnishing became more varied. Wardrobes and sideboards were added to the usual trunks. Clocks were sold and became widespread even in rural areas by the end of the 19th century. In cities, boilers tended to equip old fireplaces where cauldrons once hung. Houses with one room in which entire families lived, ate and slept gradually became larger. Openings also became larger with the fitting of glass window panes. The

oiled paper used formerly was replaced by flat glass, which, thanks to a series of technical innovations, became more transparent and available in larger dimensions. The list could continue. But many of these new consumer goods became widespread despite the fact that labour productivity remained relatively stagnant.

Furthermore, in the framework of their reflections on the cost of maintaining a worker (then a highly topical issue), various socio-economists in the mid-19th century, such as Frédéric Le Play and Karl Marx, perceived that the "standard of needs" had increased since the beginning of the century. The pioneer of studies on consumption, Ernst Engel, observed in 1853 that the share of income devoted to food tended to decrease as household income increased. But, in 1891, he noted that this share had not decreased as much as the general rise in income since 1853 would have led observers to presume. In other words, the (concave) function of food consumption according to income levels had shifted upwards (sliding along a 45° slope) between 1853 and 1891. Engel explained this problem in particular by improvements in product quality. *The effort made to improve food to make it richer in animal-based substances is even greater than that made to increase the quantity of this food*, he wrote.[31] He made the same observation for housing expenses. This "quality effect" has since become an integral part of consumption studies, but the reality was that in this case, *innovation* was at work.[32] In 1907, the economist and historian Emile Levasseur also observed, regarding the 19th century, that *in every social class the number of needs has risen with the temptations of a market that is more abundant and variously provisioned and the satisfaction of these new needs has increased the budget allocated to spending on them*.[33]

5.2 The Post-War Boom and its demise

We saw previously (cf. Ch. 1, Figure 1.1) that, historically, the evolution of working time as a function of its real cost (or in equivalent terms as the wage rate before distribution, or the evolution of labour productivity) has been very irregular. Between 1881 and 1938, gains in productivity were divided with more or less half resulting in shorter working times and the other half resulting in annual increases in income. If this trend had continued after World War II, the average working time today would be about 650 hours a year! However, after the war this duration started to increase up to the mid-1960s, to the point of clearly exceeding the legal duration due to massive reliance on overtime. This was despite the reintroduction of the 40-hour working week in February 1946, a measure initially enacted by the Front Populaire government before the war. Thus, in 1963, the (effective) duration was longer by 3.1%, 16.0%

and 1.2% in comparison with 1949, 1938 (a year of economic depression) and 1931, respectively. During this time between 1931 and 1963, the wage rate (before redistribution) increased by a factor of 2.8. This extension is especially surprising since wage rates (and thus labour productivity) rose at a historically unprecedented pace.

This cannot be explained by the reconstruction of the country following the devastation of the war or by catching up with the level of activity prior to the Great Depression of the 1930s: as early as 1949, production in France reached the highest level recorded previously, that of 1929.[34] But economic growth continued for yet another 25 years at a very fast pace: +5.3% a year of total GNP between 1949 and 1974. Admittedly, demographic growth in the country had been strong during this period, but its effect should be seen in relative terms. If we compare the evolutions of total GNP and labour productivity during the thirty years following World War II, it can be seen that the rate of growth of the latter is only slightly less than that of the former. What is more, part of this demographic growth, due to the arrival of immigrant workers, was above all a consequence of strong economic growth before becoming a contributing factor. That being said, the change in the structure of the population brought about by the Baby Boom undoubtedly had a positive effect; though if we subjected the areas of consumption concerned to closer examination, it is probable that this effect would turn out to be quite modest.

We propose that the main reason for this economic dynamism can be found in the major innovations in the consumer goods that became available on the market at that time[35] and of which the crisis, followed by the war, had delayed the distribution.[36] Certainly, the paid holidays introduced in 1936 led working people to take their first holiday trips, and so cameras and radios became widespread before World War II. But it was above all after the war that a series of new goods appeared in France (and more generally in Europe), including household appliances (washing machines, refrigerators, vacuum cleaners, etc.), television and, of course, the automobile, which is still the most expensive consumer good for most households. People saw the car as a means of realising their dreams of escape and freedom. Increasingly reliable popular models had been developed just before the war, but their mass distribution in Europe had to await its end. Also, scientific production methods (Taylorism) allowed mass production and lower costs. The oil industry, car services and repairs, insurance and tourism all flourished thanks to the car. Lastly, the road network had to be rebuilt and considerably extended. All these new goods that continued to be improved during

and after the war spurred intense enthusiasm to the point that most households owned a car by the end of the 1960s. And this was despite advertising campaigns whose means were derisive compared with those available today. In addition, we must also take into account the initiatives taken by the State with, for example, the introduction of social security (1945) and the extension of education beyond primary level. These decisions (with many other related ones) considerably stimulated the supply and consumption of public and private health, education and training services.

Increasing consumption and thus, beforehand, incomes became a priority. Moreover, the third week of paid holidays, granted in 1956 by a left-wing government that wanted to leave its mark on the symbolic stele of 1936, had not been the subject of serious claims by the labour movement! During the intense activity of the Post-War Boom, working time increased, and immigration and the influx of workers from rural regions were encouraged.

Indeed, during this period, France and Western Europe in general underwent dynamic growth comparable to that of the United States in the 1920s. This dynamic was based on the same household durables (especially cars), but it occurred at a still faster pace and, above all, without being interrupted by a crisis like the Wall Street Crash of October 1929. The subsequent collapse of the stock market and the financial system should not mask the fact that throughout the 1920s, corporate profits in the United States increased two to three times more rapidly than wages. The Depression was first due to a crisis in the real economy corresponding to a Juglar cycle. However, following World War II, wages in most industrialised countries kept pace with gains in productivity due to advances made at the time in labour law. Moreover, stock market indexes, which reflected corporate profitability, were not subject to any steep rises during this period, nor was there any great slump.

However, in 1967, for the first time since the end of the war, unemployment, in the ILO meaning reached 2% of the active population in France. And in the following decade, it rose constantly despite Keynesian policies and the sharing of added value much to the benefit of employees. In fact the statistics show that as from the end of the 1960s, the level of ownership of household durables, which had been the foundation for the previous expansion, showed signs of saturation. Hence the growing market for durables changed to a stagnant one of replacement. It appears that no other goods or services liable to drive the same desire for acquisition as those that emerged in the 1950s took up the baton, nor for that matter did their production require such a

considerable volume of labour. In parallel, the growth of labour productivity continued apace in agriculture and industry (with the robotisation and automation of factories). To illustrate this shift, the rate of household savings (excluding reimbursements of home mortgage payments) progressed considerably between 1969 and 1981, whereas the real interest rates accorded became particularly negative when confronted by price inflation! Afterwards, this savings rate decreased slightly following the slump in purchasing power due to the second oil crisis and after austerity policies were implemented instead of those aimed at recovery. Whereas in the mid-1960s the effective duration of working time reached its post-war maximum (46 hours) and substantially exceeded the legal limit (40 hours a week), it gradually decreased to reach the legal limit at the end of the 1970s. From 1982, this effective working time stagnated around a legal working time of 39 hours a week, and claims made by trade unions to lower this limit became increasingly strong. In 2000, they resulted in the 35-hour week. Average growth in GNP (in volume),[37] which had been 5.3% a year between 1949 and 1974, fell to 2.3% between 1974 and 2001 and then to 1.1% between 2001 and 2011. This was so in spite of every political effort being made to spur livelier growth at the cost of increasingly higher debt. The contrast between these two major periods is flagrant.

What can we deduce from this history? Although the asymmetric nature of the labour market, i.e. the effective power of the employers over their employees, a power enshrined by law, permits the spontaneous extension of working time, the reverse, meaning the spontaneous reduction of working time, cannot be achieved without direct or indirect political intervention. Therefore, immediately effective working time started to decrease at the end of the 1960s; it would have been necessary to simultaneously lower the threshold at which overtime (i.e., the legal duration) started in order to maintain the same difference between the effective duration and the legal one (15%, i.e. 6 hours in 1965), thereby inciting companies to privilege employment rather than increasing overtime. Such a policy would have led to subtler management, sharing the gains in productivity in the economy between wage increases and lowered working time, thus avoiding the rise of mass unemployment. Such management would certainly have been more efficient than the sporadic and sudden reductions in working hours which have given rise to certain perverse effects, weakening the impact on employment.[38]

Since they have neither incorporated this dual aspect of technical progress nor the fact that labour is an intrinsically asymmetrical

market, the dominant economic doctrines and politicians have shown that they do not understand that working time is a fundamental regulating variable in the long-run. François Mitterrand was right: "we've tried everything against unemployment".[39] But he did not know how to choose. The Keynesian and supply-side solutions implemented since the end of the Post-War Boom were for the most part inappropriate.

So what does our future portend? Will we return to the strong growth phase of a new Kondratieff wave? It is obviously difficult to predict what future innovations and their effects will be. Whatever the case, at present, no labour-costly goods seem to be emerging likely to trigger the same type of boom in consumption as the automobile. Thus the share of industry in the economy should continue to shrink in the medium term. On the contrary, the service sector should continue to expand with the growth in demand for health services (linked to progress in innovations in this area and also to the ageing population and thus demands to cope with the dependent elderly). Likewise, the demand for education, training and cultural services should also grow, if only because of the growth of knowledge. However, it is possible that the outlook for gains in productivity will be less easy to achieve for these types of services, despite the fact that the development of new information and communication technologies somewhat contradict this assertion. All said and done, it is far from easy to forecast the direction, in the future, in which the gap between the evolution of labour productivity and that of consumption will move.

5.3 Working time and Malthusianism

Alfred Sauvy, the great opponent of Malthusianism before God, criticised the 40-hour week introduced in 1936, as *the most damaging act committed since the revocation of the Edict of Nantes* in 1685![40] This condemnation is all the more surprising since it dates from 1984 and ignores the fact that the 40-hour week was reinstated in February 1946. Although Sauvy accepted that reducing working time could be justified for social reasons, from the theoretical standpoint he was convinced that it was a necessarily Malthusian measure. Insofar as the quantity of production factors (in this case labour) deployed to produce is lower, the only possible result is that it undermines the potential gross national product. It shrinks the production-possibility frontier dear to the theoreticians of neoclassical economics. This reasoning is still in vogue in the dominant theoretical corpus which states that the level of economic activity depends *only* on the quantity of factors mobilised to produce

and the technology employed. According to this type of reasoning, consumers are passive subjects, meaning that they are obliging receptacles of production activity (performed by businesses) via the incomes that the latter distribute. In brief, we return to Say's law: "supply creates its own demand" – i.e. everything that is produced will necessarily be consumed since an equivalent purchasing power has been distributed in the form of income.

Historians have considerably amended the assertions made by Sauvy. The rigid application of the 40-hour weak possibly slowed the economic recovery in the short-run in 1937, but many other factors[41] were involved in the Front Populaire's economic failure. Whatever the case, the reintroduction of the 40-hour week in February 1946 proved that shortening the legal duration of work (i.e., the threshold at which overtime starts, provided it is authorised) is not Malthusian. What followed was exceptional economic growth that was also accompanied by the extension of the effective duration of work and massive immigration! Like that of so many economists, Sauvy's error was that he did not consider the factors liable to act in the *long run* on the propensity of households to consume, that is to say their desire to consume their income or not.

Furthermore, this reasoning refuting the so-called Malthusianism underlying the limitation of working time led to absurd suppositions. If the GNP of a country and thus its economic power depended only on the degree of the mobilisation of factors of production, competition between countries to win world leadership would lead them (especially dictatorships) to increase working time to its extreme possible limit! In reality, the standard of living of the "average household" in all developed countries remains relatively similar, as if it were bounded by the basket of consumer goods available to it. The composition of this basket is now more or less the same everywhere.

Certain economists made a similar error by asserting that the claim to reduce working time to combat unemployment was based on the same premises as the position defended by the far right which aims at chasing away immigrants as they take work away from indigenous workers.[42] In reality, when one chases a worker away, one is also eliminating a consumer from society, since one only consumes what one produces and vice versa. If the measures proposed by the far right were applied, they would result in weakening the country's consumption potential and thus its economic activity, but reducing working time in no way affects consumption potential. The aim is to match the productive efficiency of individuals with their desire to consume.

5.4 The pseudo explanations for mass unemployment

This historical perspective sheds a highly relative light on most of the explanations for mass unemployment found in the economic literature.

The rigidities of the labour market? It was said earlier (Ch. 1, §5.2, Ch. 2, §3) that this market became rigid in France and most other developed countries immediately after World War II, particularly with collective agreements in every branch of the economy. Evidence proves that this rigidification did not jeopardise economic dynamism or employment. On the contrary, it led to the equal distribution (indexed on gains in productivity) of added value between salaries and capital for three or four decades following World War II. In addition, there were no Juglar type crises during this period, contrary to what had occurred during the previous 150 years.

Globalisation? This catch-all notion requires defining. In fact, customs barriers were raised much faster and more thoroughly in the two decades following the war than in the next few decades. In France, customs duties on industrial products amounted to about 40% in 1947, just before the first international trade negotiations. Following the different rounds of negotiations, these duties fell to about 10% in the mid-1960s and to 6% in the mid-1970s; they are now in the region of 3% to 4%. It was also in the 1950s that the construction of Europe began, triggering opposition from both the federation of French employers (*Conféderation Nationale du Patronat Français*) and the CGT (trade union), which feared German and Italian competition. As for the gross destruction of jobs (whatever the causes: technological upheavals, foreign competition, etc.), the number of jobs destroyed was two or three times greater during the first period than in the second (particularly in farming and coal mining), but this destruction was more than offset by the massive creation of jobs in the sectors undergoing expansion mentioned above, to such an extent that immigration was not restrained but encouraged!

Poor workforce adequacy? Technological upheavals were no less groundbreaking during the first period. Moreover, the initial level of education of most employees was much lower than it is today (see Ch. 5, n. 8).

Uncertainty? The institutions which, in Europe, were founded to provide security to the population (social security, labour law, insurance, etc.) are still in place in most countries, and the guarantees they provide have at least been maintained since the end of the war. Moreover, on the political level, reasons for worry and pessimism were, objectively, far more real during the first period than during the second if we take into account, among other things, the wars of decolonisation and the

Cold War along with all their frightening episodes. Otherwise, regarding the usual uncertainty of life, it is corrected for cyclic variations in the long-run and can no longer be considered as a variable.

The burden of tax and social security contributions? In most developed countries, following World War II, tax and social security contributions increased considerably, especially during the Post-War Boom, with the marginal tax rate on income reaching its peak. In France, the State "grew in one surge" after 1945 according to two eminent observers, François Bloch-Lainé and Jean Bouvier.[43] It was the State that oversaw the country's reconstruction, launched the major infrastructural and modernisation programmes, developed secondary and higher education and set up the social security system. In parallel, it had to finance two harrowing wars of decolonisation. Once again, none of these factors jeopardised employment or the exceptional growth of the 1950s and 1960s. Likewise, comparisons between countries do not reveal any negative correlation between these contributions (low in Japan and the United States; high in the Scandinavian countries), living conditions and economic dynamism. Also, it should not be forgotten that the increase of taxes and social security contributions aimed at financing greater consumption of public services led to increasing the propensity of society to consume them in the same way as a new private consumer good. (We recall that the preferences of households for private and public goods are assumed to be convex: households want to benefit from both.)[44]

Conclusion: a social history that becomes intelligible over a long period

This chapter has focused on our *second hypothesis, which distinguishes the dual dimension of technical progress*, which is to say, innovations in the production process and in consumer goods. As is known, the first contributes to increasing the productivity of factors (especially labour) and thus unit wages, and as was shown, the second increases the propensity of households to consume, all other things being equal, and thus stimulates consumption over long periods. However, there is no reason, a priori, why these two dynamics should equal each other.

Combined with the first hypothesis developed in the previous chapter, the second hypothesis permitted taking into account the pertinence of the behaviour exhibited by the labour movement, with its increasingly insistent claims during long downturns, for the reduction of working time to combat rising unemployment. It permitted validation of the idea according to which technical progress could, over the

long term, generate an increase in labour productivity faster than that of consumption. Also, to satisfy the latter where it was rising, the global volume of labour necessarily decreased. Thus, for all employees to keep their jobs, politicians had to reduce working time, something that has been done repeatedly (though reluctantly)[45] for more than a century and half.

In parallel, reasoning aimed at demonstrating that innovations in the consumer sector act on the dynamics of consumption allow, theoretically:

- understanding why the tastes of consumers (their indifference maps) do not remain stable through time: innovations in consumer goods contribute to modifying these tastes;
- interpreting from a strictly microeconomic viewpoint the concavity of short-term consumption (that is to say, Keynes's well-known *fundamental psychological law*): at a given instant (or in the short-term) consumption, taken as a whole, can be considered as a priority good (income elasticity between 0 and 1) while saving a luxury good (income elasticity higher than 1);
- explaining why this household consumption function is concave when examined in the short run but linear in the long run: in the same way as innovations in the production process shift the curves of production functions upwards (i.e. curb the decrease of their marginal product), those in consumer goods shift the curves of functions of income utility upwards for the purposes of consumption, thus also shifting the curves of (instantaneous) consumption functions of individuals upwards (i.e. curbing the decrease of the marginal propensity to consume);
- complete Solow's neoclassical growth model by emphasising the two highly specific impacts of "technical progress" on the productivity of factors and on the propensity to consume. Thus,
  - by loosening the constraint of scarcity of factors, innovations in the production process curb the decrease of marginal productivity; that is to say, they increase workers productivity and thus unit income;
  - innovations in consumer goods, by modifying the arbitrage of households between consumption and savings, curb the decrease of the marginal propensity to consume; that is to say, they increase workers propensity to consume their income;
  - this productivity of factors and this propensity of households to consume together determine

    - the global level of consumption and thus the level of economic activity and the global income of society as a whole;
    - the global volume of factors engaged by companies.
- interpreting the evolution of the effective duration of working time (all employees confounded) over a long period, which is relatively irregular if we correlate it with that of real wage rates;
- specifying Schumpeter's interpretation of the origin of fluctuations of economic activity over long periods or Kondratieff waves.

5
The Normative Implications for Labour Policies

Introduction

Chapter 3 permitted validating the behaviour of the labour movement which sought, by way of offensive strikes during the growth phases of the Juglar cycle, to reduce working time in order to increase wages and thus make this cycle more regular. This chapter also allowed interpreting the observation made by historians that during the growth phases of this cycle, the profits of companies increased faster than wages, whereas the contrary occurred during recession phases. We showed that the origin of these facts lies in the asymmetry of power predominating in the labour market between employers and employees. In a context of technical progress, employers can influence the volume of work supplied by employees to such an extent that gains in productivity and the rise in added value generated during growth phases benefit the income gleaned from capital more than that earned from work. After several years, this growth results in a crisis of overinvestment and overproduction.

Chapter 4 allowed validating the behaviour of the labour movement which sought, through the claims it made during periods of slow growth in the long Kondratieff wave, to reduce working time to combat unemployment, since it considered that technical progress led labour productivity to increase faster than consumption. Thus, to satisfy the demand for consumption where it was rising, a lower global volume of labour was required through time. This chapter also permitted interpreting the observation made by historians of the very irregular distribution of gains in productivity over two centuries between increased wages and reduced working time, to such an extent that in certain periods the effective duration of working time was seen to increase. We showed that the origin of these occurrences lay in the twofold impact of technical progress: on the

one hand, it contributed to increasing productivity factors (particularly of labour); on the other, it contributed to increasing the propensity to consume (by the innovations it implemented in the consumer goods sector) and thus stimulating consumption by households. Also, there is no reason why the two dynamics should be equal over the long-term.

The result is that two categories of unemployment emerge (excluding "natural" unemployment linked to imperfect professional and geographic mobility):

- *Short-term unemployment* linked to discordant evolutions, profits and wages, ending in crises of overproduction (or overinvestment). The latter develop when the wage rate is not adjusted or indexed to the (net) maximum average added value of labour.[1]
- *Long-term unemployment* linked to discordant evolutions, labour productivity and consumption (or global demand); the dynamics of the latter being weaker than that of the former, whereas the legal duration of work remains unchanged.

Let us examine the policies that could be implemented to combat this unemployment.

1 The combat against unemployment

It is out of the question to attempt an exhaustive analysis here; we limit discussion to a schematic view by situating our reasoning in line with the theories developed previously.

1.1 Short-term unemployment

1.1.1 Prevention

Unemployment can be prevented by adjusting the wage rate with the maximum average (net) added value of labour (such that companies do not generate any surplus profit) and then by indexing this rate to productivity gains (cf. Ch. 3, Figures 3.7, 3.9, 3.10).

Regarding this point, as stated previously, we estimate that the considerable strengthening of workers' rights in western countries during the 1930s and following World War II allowed employees to more or less obtain this indexing, and it played a fundamental role insofar as the main source of economic fluctuations prior to this period was the disparity between the evolution of profits and of wages. It was probably more decisive than the Keynesian policies implemented, in their strict meaning, to regulate global demand.

1.1.2 Absorbing existing unemployment

Failing prevention, this type of unemployment can be absorbed by Keynesian policies (of budgetary and monetary expansion) aimed at economic recovery.

1.2 Long-term unemployment

1.2.1 Prevention

This type of unemployment can be prevented by shortening legal working time or, more specifically, lowering the threshold at which overtime starts from the moment the dynamics of consumption becomes structurally less than that of labour productivity (consumption elasticity in relation to unit income falling to a value less than 1). This overtime threshold (the so-called legal working time) must always be significantly lower than the effective working time, with an overtime pay rate sufficiently high to persuade companies to maintain and create a maximum number of jobs and get them to use overtime as little as possible. In parallel, the fixed costs linked to each of these jobs must be minimised. This amounts to setting up a kind of *dual administered labour market* by fixing the legal working time: a basic market corresponding to 85% of the global volume of labour and the rest (15%) remunerated at a higher rate.[2]

Thus, in the case of France, to avoid the slow rise of unemployment during the long crisis of slow growth[3] of the last quarter of the 20th century, the government should have lowered the threshold at which overtime became effective from the end of the 1960s to make sure that it remained significantly shorter than the effective working time. It would also probably have been necessary to increase the cost of overtime and, moreover, consider the legal working time annually or over several years.[4] These measures would have encouraged the social partners to privilege reducing working time rather than raising global wages, with respect to the allocation of gains in labour productivity, during collective bargaining.

It is noteworthy that individual freedom remains protected despite the asymmetry of power prevailing on the labour market and despite its being in the general interest of society that the public authorities take measures regarding working time. On the one hand, any individual wishing to work more to earn more can seek employment in thriving sectors in which companies find it hard to recruit and in which overtime is common. On the other hand, they can always work for the time they wish and possibly find additional employment as an independent

worker (entrepreneur), follow a training course, do voluntary work, work in the home (e.g. do-it-yourself) or fulfil personal goals (e.g. produce art, invent new machines and systems, etc.).

1.2.2 The absorption of existing unemployment

Keynesian policies are unworkable for this type of long-term unemployment, except for increasing the number of public posts and at the same time raising taxes and social security contributions (see §3 below). Otherwise, the preventive policy mentioned previously of lowering the overtime threshold can also be implemented as a remedial measure. However, today wage costs for a company include social contributions paid to finance social security services and unemployment benefit. Therefore, the State, which legislates in this area, wields an efficient arm for promoting the rapid recruitment of job seekers to fill the posts freed by the reduction of working time, a measure proposed by a certain number of politicians, union leaders and economists.

Firstly, the State can lower the overtime threshold and progressively increase the cost of overtime to the exclusive benefit of social security services.

Secondly, it can lower social charges (for hours worked within the limit of legal working hours) for companies that increase their workforce by x% by filling the posts created by reducing working hours. This must be done by maintaining the global net wage of each employee at the same level. One of the keys of success of such a substitution is that the total cost of labour for companies must not be higher (or only slightly so) after the operation than before. This reduction of social charges may prove expensive for the State purse (although unemployment and precariousness also represent an expense). Thus, if excessive price inflation is to be avoided, the additional cost must be financed by increasing taxation.[5] Otherwise the net wages of employees must be frozen for a certain period or by the modulated reduction of wages[6] according to level.

Let's examine the consequences of such a substitution in both cases.

- *Substitution in the case of a perfectly homogeneous labour factor*

If labour were a perfectly homogeneous factor, the modalities of such a policy would be simple and its result guaranteed: unemployment would disappear immediately.

From the *static* viewpoint, i.e. by reasoning this substitution over a very short period of time so that there is no increase in labour productivity, on the one hand, and no change in consumer preferences, on the

other (i.e. no change of their consumption functions), the reduction of working time required could even be lower than the proportion of job seekers.

Indeed, let's assume unemployment amounts to 10% of the active population, and that we substitute the recruitment of jobseekers with the time freed by reducing working time by the same percentage (10%) so that the volume of labour and the total wage bill remain unchanged for companies. For the sake of simplicity, let's also assume that this substitution is neutral for the State, meaning that the increase in net income of job seekers finding a job is precisely offset by a reduction of the net wages of employees who held jobs and whose working time has been shortened.

In this case, the increase in consumption by the former jobless will be greater, globally, than the fall in consumption of workers already in employment. This is due to the decrease in the marginal propensity to consume: the more income increases, the more consumption increases, but less and less strongly (cf. Ch. 4, §2.3.2). Global demand would therefore increase, in turn requiring a greater volume of labour to satisfy it, thus a percentage reduction of working time less than the unemployment rate (10%).

This increase in global demand could also be accentuated by the effect of this substitution. Indeed, we saw that the extension of available free time is in itself a factor favouring consumption (Ch. 4, §2.3.8).

This strengthens the conclusion according to which, from the static viewpoint, the reduction of working time required to absorb unemployment must be lower than the rate of the latter. However, this static reasoning is insufficient. Hiring unemployed workers to fill in the time freed by reducing working hours will change a certain number of behaviours, of both consumers and entrepreneurs, especially as it will require time, as will be seen further on.

From the *dynamic* viewpoint, this substitution, clearly explained and starting to provide initial results, will restore the confidence of households and likely lead most of them to save less and increase their propensity to consume. This goes in the same direction as the conclusion of the static reasoning.

On the contrary, companies will probably profit from the reduction of working time and increase their productivity by reorganising production, thereby running counter to the previous conclusions.

Everything therefore depends on the relative effects of this substitution – on the increase in labour productivity, on the one hand, and the increase in consumption, on the other. If the effect on consumption is

stronger than on labour productivity, the percentage of reducing the (legal) working time can be lower than the unemployment rate. If it is the reverse, this percentage of reduction must be higher.

Furthermore, the increase of labour productivity and thus, finally, the wage rate makes it possible to reduce wages (initially of those already employed), in view to ensuring the substitution of hiring unemployed workers, though less than in the case of static reasoning. The total wage bill could finally be higher but without damage for companies.

To sum up, from the dynamic standpoint, hiring the unemployed to fill the time freed by reducing working time will finally prove more expensive for companies, though since they will produce more (for the same volume of labour) and consumers will consume more, their level of profitability may remain the same without any increase in inflation. This is the reason why we conceded previously that "one of the keys of success of such a substitution [was] that the total cost of labour for companies must not be higher". This could nonetheless be the case, but "only slightly higher". This also shows that the claim for a reduction of working time without loss of wages is not necessarily demagogic – as long as this reduction remains modest – otherwise satisfying it will result in an inflationary process.

- *Substitution in the case of a non-homogeneous labour factor*

Unfortunately, such an ideal situation with a perfectly homogeneous labour factor does not correspond to reality.

Firstly, the variety of qualifications is considerable, whereas the majority of the unemployed have very few.

However, we know that this long crisis of the end of the 20th century has occurred with a process of downgrading *young graduates*[7] – a phenomenon that theory finds hard to explain but becomes perfectly intelligible when taking into account the fact that this crisis is due to maintaining rigid working times whereas labour productivity increased more rapidly than consumption over the last three to four decades. Confronted by excess labour supply at every level of qualification, young graduates therefore seek jobs for which they are over-qualified. Since employers generally choose the most qualified candidates (i.e. with the highest degrees) for a given post, at the end of the line it is those that have no qualification that find themselves excluded from production.[8] A policy aimed at reducing working time would therefore generate the reverse process of pulling qualifications upwards, thereby reclassifying those that had to downgrade their ambitions, given their level of learning, for recruitment.

Nevertheless, it is quite possible that there is a shortage of graduates in the active population with certain qualifications though the consequences should not be overestimated. After all, recourse to overtime, though costly for companies, is always a solution initially. More difficult is the problem of persons more or less excluded from society that find it hard to get back into productive life and immediately work as efficiently as other active individuals. This problem requires specific active training policies aimed at reintegrating marginalised persons and making up for their lack of qualifications.

In addition, there is the case of functions that cannot be shared between individuals since they require a monitoring and decision-making system. However, this mainly concerns the senior managers of companies.

Secondly, we saw that for the company the labour factor comprises fixed costs linked to each individual. This concerns in particular the fixed costs of recruitment, training, personnel management and additional production factors (each worker is generally associated with a machine, office or other equipment).

In fact, the fixed cost of training is generally paid for by the entire community. The costs of recruitment and personnel management are, however, quite low. Lastly, the cost of complementary equipment – the highest – can lose this complementary nature, i.e. its association with the individual, if the company reorganises labour so that workers succeed each other in shifts at the same workstation. (What is more, if the company takes advantage of the reduction of working time to increase the annual equipment utilisation rate, it can even lower its fixed production costs.) However, not all companies (or all administrations) can reorganise labour easily and immediately. They probably have to make new investments (in offices and other equipment) to achieve the substitution. This is why it would not be advisable to lower the profitability of companies when introducing this measure. This also explains that this substitution requires a certain period of adoption that cannot be less than one year.

Finally, taking into account that labour is not a perfectly homogeneous factor does not fundamentally modify the conclusion of the reasoning from the dynamic viewpoint. The consequences of non-homogeneity should not be exaggerated. Otherwise, whereas the entire microeconomy is built around the possible substitution between totally heterogeneous production factors (e.g. labour by capital), it would be aberrant to consider that it cannot be achieved between the working hours of the active population and the recruitment of job seekers!

Admittedly, in the very short-term, the possibilities of substitution are quite limited, but in the medium and long terms they become increasingly stronger as the resources used to train the workforce (public, private, company in-house resources, on the job, etc.) bring about their effects.

2 The effects of neoconservative economic policies confronted by long-term unemployment

Henceforth, it is possible to interpret the effects of (ultra)conservative policies aimed at gradually dismantling the labour laws in place in many developed countries. As we have seen, these policies have resulted in a certain reduction of unemployment but at the price of an undisputable increase in income inequality.

If we consider that the current unemployment of developed countries is due to the fact that working time has been insufficiently reduced in a context of a long economic downswing during which consumption elasticity relative to unit income is less than 1, then let's examine what the consequence would be of eliminating the minimum wage and unemployment benefit, in brief, doing away with labour legislation.

Two cases can be envisaged: one with a perfectly homogeneous labour factor, the other with a heterogeneous labour factor.

2.1 Labour is a homogeneous factor: the return of short (or average) run cyclic crises

Let's assume that the volume of labour required to satisfy global demand is L_e. Since working time has not been reduced sufficiently in the previous phase during which the consumption rate was less than that of labour productivity, the volume of available labour, by incorporating the unemployed who no longer receive benefits and are in imperative need of employment, increases to reach: $L^* > L_e$ (cf. Figure 5.1).

This surplus volume of labour exerts downwards pressure on the wage rate or at least prevents it from following gains in productivity. This rate will therefore draw away from the breakeven point (or long term equilibrium wage rate): $w^* < w_e$. We return to the situation described in Chapter 3: companies will make increasing surplus profits and this process will result in a crisis of overinvestment and overproduction/under-consumption. We therefore fall back into the short-run business cycles (Juglar cycles).

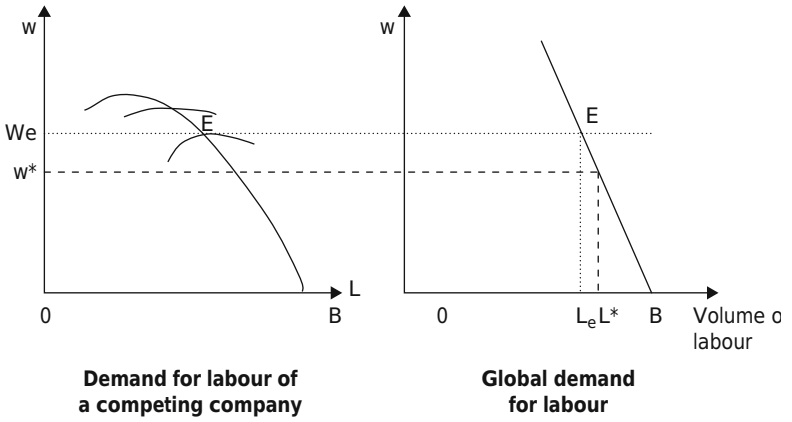

Figure 5.1 The effects of neoconservative economic policies confronted by long-term unemployment

2.2 Labour is a heterogeneous factor: the aggravation of income inequality

Now let's consider the more realistic case in which labour is a heterogeneous factor with relatively viscous (professional and geographic) mobility. Such a conservative economic policy of dismantling labour legislation will result in an increasingly segmented labour market. On the one hand, employed workers will see their wages rise due to the termination of social contributions and other taxes aimed at helping the jobless. On the other hand, the unemployed will have no other option (apart from begging and crime) but to place themselves before the residual demand of the labour market, corresponding to levels of productivity lower than the break-even point (i.e. the maximum [net] average product of labour). This corresponds to the residual triangle L_eBE in Figure 5.2.

Very schematically, two partitioned labour markets appear:

- *a primary market*, still protected (possibly) by collective agreements, represented by rectangle $0L_eEw_e$; and
- *a residual and underproductive free market* (corresponding to triangle L_eBE).[9] In the short-run, it is likely that this residual market will be relatively tight. Since the number of companies and the capital stock remain invariable, the marginal productivity must fall very quickly below the break-even point. This is confirmed by the elasticity data of the global labour demand curve.[10] This explains that the different

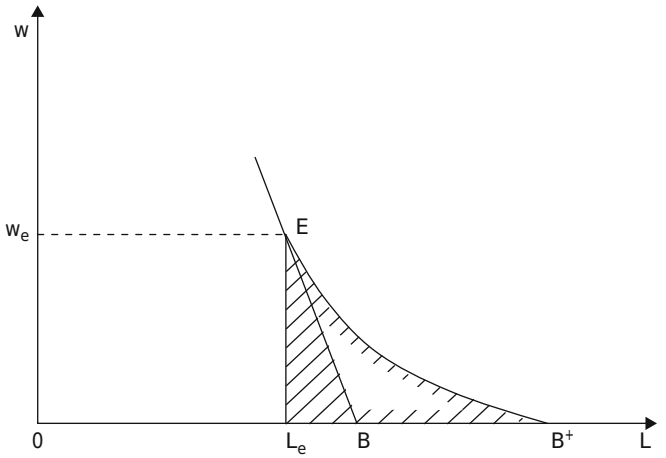

Figure 5.2 Residual demand for labour and casual work

types of aid given for poorly qualified jobs granted to companies over the last two decades in France have appeared relatively inefficient. However, in the longer term this residual market is probably much larger (rectangle L_eB^+E). For very low wage rates, a number of private individuals could employ people in their service either occasionally or permanently. As before, in France, the middle and upper-middle classes hired large numbers of domestic staff and servants before the introduction of social insurance (1930), social security (1945) and the minimum wage (1950). Women and men could very well even replace machines, especially in automatic distribution systems, as gas station attendants, counter clerks, ticket punchers, bag packers at store checkout desks and so on. Seen from a certain angle, these jobs, sometimes encouraged and supported by economists and politicians, amount to a modern version of Luddism! In this respect, the comparison between France and the United States is edifying. Since 1950, the minimum wage in France has more or less followed the evolution of GNP per capita. On the contrary, in the United States since the end of the 1960s, the federal minimum hourly wage has fallen by a good third in real terms, whereas the GNP per capita has doubled! This is the main explanation why the rate of employment in services (especially hotels and catering) is much higher in the USA than in France.[11]

This also explains the phenomenon of downgrading, the spread of casual jobs and the increase in income inequality (the phenomenon

of the working poor) in the last 25 years of the 20th century. This has given rise to growth rich in jobs such as that seen in the United States and which has seduced certain naïve commentators. These jobs are necessarily underproductive and explain Solow's paradox: *You can see the computer age everywhere but in the productivity statistics*. The increase in labour productivity in sectors that have become computerised and automated has been partially cancelled by these residual, underproductive and underpaid activities.[12] It is even possible in those countries that have deregulated their labour markets most that we will be able to make the same observation as in the 19th century, when, trend-wise, global wages were as low as the working day was long (cf. Ch. 1, §4.3).

That being said, it can be considered that the world economic situation over the last one or two decades presents the characteristics of the two cases developed above: a return to short business cycles (8–10 years) and the exacerbation of income inequality and precariousness.

3 The effects of increasing employment in the public sector

The contrary approach, at first sight, to the previous one, consists in absorbing unemployment by hiring public employees (or assimilated with public employment) by considering, a priori, that there is a considerable need for public services to be satisfied. Financing these jobs would be provided by reallocating funds for unemployment benefit and by increasing taxes.

In comparison to the scenario analysed previously, of the State managed trade-off between the time freed by reducing working time and the hiring of unemployed workers, a policy of expanding public services would have the following results.

From the *static* viewpoint, the effect on income distribution (between persons already employed and the former jobless) would be the same globally. On the other hand, the reduction of working time is replaced by an increased supply of public services of the same volume in terms of time. The consequence on consumption (of commercial goods) would be relatively similar, except that since free time has not increased, no positive effect on the propensity to consume can be expected. (Furthermore, we assume that the concrete modalities of sharing income bring about the same reduction of inequalities and thus the same effects on the propensity to consume).

From the *dynamic* viewpoint, the effect of consumption will be the same. However, there is no reason to expect a stimulating effect on labour productivity in the same way as with the reduction of working time.

The problem of such a policy is not really the increase in taxes and social charges that it leads to. Admittedly, it has become fashionable recently to protest the level of taxation believed to be intolerable, but there is nothing to prove that taxes discourage global economic activity to the point that "too much tax kills tax", according to the argument of Arthur Laffer, especially in France, where taxation is generally more proportional than progressive with respect to income. In reality, the problem is that it is not certain that the public services created will match real demand. More specifically, there is nothing to prove that the marginal well-being supplied by these services is higher than the marginal opportunity cost of the labour that they require from the community. If this well-being were lower (given the difficulties of such a calculation), it would correspond to the satisfaction of a residual demand of low marginal utility in public services (of the same type as that of the residual demand for commercial goods examined previously in the case of a neoconservative policy) or possibly an illusory demand. The global well-being of the community would be diminished by such a policy driven by the State, even if, moreover, it did not lead to inequalities as great as a neoconservative policy. That being said, like companies, the State can innovate in the public services it provides, and their production would be pertinent if they met the acceptance of the population and satisfied an effective (real) demand.

Lastly, it should be added that the entire reasoning developed in this paragraph applies in the same way to *public investment* policies (e.g. in public works).

Conclusion: equal sharing of added value and labour demand

The analyses developed on the basis of our two key hypotheses in the two previous chapters underlined two types of unemployment (excluding "natural" unemployment):

- Short-term unemployment due to the asymmetry of power in sharing added value between the remuneration of capital and the remuneration of work, resulting in a crisis of overinvestment and then a depression corresponding to a dip in a Juglar cycle;

- Long-term unemployment due to consumption being structurally less dynamic than labour productivity while the working time fixed by companies (and the State) remains unchanged.

Policies to prevent these types of unemployment stem from the very expression of their causes:

- The indexing of unit wages against the evolution of labour productivity;
- Indexing salaried working time against the differential between the dynamics of consumption and labour productivity. In more concrete terms, what is proposed is to set up a dual administered labour market with
  - the establishment of a basic annual duration constantly equal to 85%, for example, of the average effective working time; and
  - the remaining 15% paid as overtime at a rate high enough to act as a permanent incentive to companies to recruit unemployed workers as much as possible rather than pay too much costly overtime.[13] In parallel with this, the fixed costs linked to the recruitment of new workers should be minimised.

  If the effective working time, including overtime, were to decrease, since consumption (and thus global demand) is less dynamic than labour productivity, the basic duration should be immediately reduced to maintain the same difference between them, and vice versa. That being said, individuals would remain free to work more, outside of a salaried activity or not, as independent workers or entrepreneurs (provided they conform to the rules in force for the occupation chosen), as unpaid volunteers or for themselves.

However, it has been seen that ultraliberal policies applied to long-term unemployment lead to the following: the reappearance of cyclic crises of short duration in the so-called Juglar cycle or increased social inequality with increased downgrading of qualifications and the development of underproductive and underpaid activities ("casual jobs") or the more probable mixture of the two. Frankly, it is not necessary to be an expert in economics to understand that if the minimum wage, collective agreements and unemployment benefits are abandoned, the notion of casual jobs will disappear formally. In the current context of mass unemployment in the developed countries, an employee would be obliged to accept any job at any price, rely on begging or a private

charity or else become a criminal! As for the massive creation of public (or assimilated) employment and public investment (major projects), although they do not have the negative consequences of the previous policies, they carry the risk of leading to wasted productive resources and, above all, wasted labour.

All said and done, limiting working time appears to be the most efficient means of ensuring that added value is distributed more in favour of labour, preventing Juglar cycles, reducing income inequality and combating unemployment.

6
Is a Synthesis of Economic Theories Possible?

1 The neoclassical approach: the main fault

The great innovation of neoclassical economics in the second half of the 19th century consisted in reasoning the notions of use value and cost (i.e. utility and disutility) not only in terms of totality and average – which is what *classical* economics had done already – but also *marginally* with the introduction of marginal analysis. Thus the concept of marginal utility permitted better understanding of demand and its paradoxes: highly useful products vital for living such as water and food are generally sold at much lower prices than superfluous products like gold and diamonds. And notions of marginal utility and marginal cost, which generally form the background of the definition of curves of supply and demand for goods, have made it possible to represent market adjustment mechanisms much more accurately in the short term. The "marginalist revolution" – the name given to the introduction of this new form of economic reasoning – opened the path to all types of optimisation calculations; in other words, how to obtain maximum advantage from rare resources through an alternative use. The crowning achievement of this theoretical construction was the demonstration of the conditions for general equilibrium over all markets. Developed by Walras (in 1874) and conclusively completed by Arrow and Debreu (in the 1950s), this analysis was aimed at verifying Adam Smith's fine intuition regarding the irreplaceable role of markets in coordinating economic activities. Millions of people work, produce and trade without knowing each other and nonetheless satisfy the demand of society for many thousands of goods. This is done through the sole force of the market without any consultation, coordination or planning; each individual seeks only to satisfy his own interest in the use of his capital and in the quest for profit, but *he is*

in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention[1] – that is to say, work for the common good. Following on from the work of Helvétius, Smith concluded that the selfish quest for personal gain was not necessarily the worst path for satisfying the general interest thanks to – it should be added – open and fair competition prevailing on the market and permitted by the rule of law. This means that the efficient functioning of the market, with the close to pure and perfect conditions of competition introduced by Walras, cannot occur spontaneously without any rule of law. If competition is not governed by such laws, competitors could try to get rid of each other as they wished (including by intimidation and violence), with the result being Mafia-run monopolies. Thus the boom in trade occurred along with the emergence of private law intended to regulate relations between individuals.

We now know that commercial trade has existed since the dawn of antiquity. Early on, humanity specialised in productive activities and learned skills,[2] but to cover all its needs, each family was obliged to acquire goods produced by others, and recourse to trading was not the most difficult means of acquisition. To free itself of the limitations of barter, which supposes perfect simultaneity of needs in terms of quality and quantity, we can assume that humanity immediately started using one or more commodities as the overall equivalent of all the others, i.e. money.[3] Contrary to what Polanyi thought, trading has therefore existed for a very long time, and we know that trading does not require adjusting the match between supply and demand by price. Trading can also be done by quantities at fixed prices: in an almost stagnant technological environment and thus with stable price ratios, artisans produced only what they were able to sell to the village communities in which they lived. Most markets (or commercial transactions) have disappeared without trace, meaning that no specific records of public intervention or regulations bear witness to their existence. Thus, a priori, we can deduce that they were relatively self-regulated and self-regulating. Obviously, when trade developed in the Middle Ages, rules were introduced to regulate the organisation of fairs and markets, the debts incurred by this trade, the insurance of goods and transport, the settlement of bankruptcies and so on. These rules formed the original foundation of commercial law, which is different from private law despite this difference remaining relatively general. For all this, it appears that certain markets were not self-regulating, since they have almost always given rise to specific, substantial and recurrent public intervention as far back as antiquity,[4] something that Polanyi had clearly understood.

Whatever the case, the recurrent crises that interspersed the entire 19th century and the first half of the 20th century, accompanied by miserable conditions for workers, revolts and even revolutions, have somewhat sapped the neoclassical belief in the self-regulating virtues of competitive markets as the sole mode of coordinating economic activities. Many researchers are convinced that the conditions necessary to reach general equilibrium are not only unrealistic in absolute terms but are far removed from the concrete reality prevailing in the operation of markets. Numerous works have therefore focused on relaxing the principles underlying the ideal of pure and perfect competition. These take into account situations of monopoly, oligopoly, connivance and monopolistic competition, the problem of imperfect information, the incompleteness of markets (the role of uncertainty), external effects and public goods and so on. All these contributions have permitted specifying the condition of State intervention, whether in the form of legislation to ensure the efficient functioning of markets, the treatment of external effects or the production of public goods. These different relaxations of hypotheses have also formed the main foundations for new approaches to the labour market, which in turn have led to the formulation of new theories[5] (see Ch. 2, §4). However, in spite of their interest, these new theories fail to explain such ordinary issues as the conflictual relations between labour and capital, cyclic crises, unemployment and the existence of specific labour laws explicitly designed by legislators to protect employees. Obviously, these laws prevail over the common law of contracts. In short, the explanatory capacity of these new theories appears somewhat limited.

In reality, the basic premise of neoclassical theory – often not formulated but implicit – is that all the actors of markets are assumed to act *autonomously* according to their *free will*. However, throughout history the jurists that have had to arbitrate the labour conflicts submitted to them in different courts of law have long understood that this basic premise does not apply to most employees as they participate in an exchange that binds them to their employers. The latter, like independent workers, enjoy economic freedom insofar as they own both their labour force and capital (tangible and intangible). On the contrary, employees do not enjoy this freedom as they generally own only their own labour for hire in order to live. They are thus economically dependent on their employers, they are unable to optimise their choice of labour supply, but employers – through their dominant position – are able to influence the duration and intensity of the volume of labour they supply. In the introduction to this work and in Chapters 1 and 3, we focused in length

on this asymmetry of power (on whose existence historians, sociologists and the general public all agree) and on its consequences. This radically modifies the mechanism of equilibrium of the labour market and of the entire economy.

Consequently, the main fault in the neoclassical approach is its representation of the *labour supply*: the problem is not that it is oversimplified but that it is false. It should not be represented by a curve whose construction presupposes the optimisation of employees' choices of supplying their labour. In reality, *this supply is subordinated to demand*. Thus, if one insists on representing it graphically, it should be in the form of a *bidding range* of varying width, from which the demanders (the employers) can choose as a function of their interests and the power they wield. It is for this reason that the labour market is by far the most conflictual of all markets, and it is why State intervention in it has the longest and in many ways the weightiest history. Certainly, Jevons was not completely wrong when he interpreted the agitation for the eight-hour day during the latter third of the 19th century as the justification of his theory of labour supply (corresponding to the equalisation between marginal utility and marginal disutility, i.e. corresponding to the optimal arbitrage between work and leisure). But the fact that this movement took the form of a claim, above all collective and conflictual, clearly proved that employees could not take this optimisation for granted.

2 The Keynesian approach: an unfinished critique

John Maynard Keynes aimed his criticism of the "postulates of neoclassical economics" perfectly well by focusing on labour supply. However, these criticisms were motivated not by the asymmetry of the wage relationship which subordinates employees to the authority of employers but by the imperfection of information. The latter did not allow employees to know, when concluding their employment contracts, the exact wage that they would receive ex post; this prevented them from adjusting their labour supply precisely so that they could optimise their preferences.[6] Thus he ignored a much simpler justification that would have allowed him to take into account the fundamentally cyclic nature of investment and crises, like that of 1929, that affected industrial economies every eight or nine years for over a century. He was obviously aware that these crises stemmed from recurrent fluctuations of the marginal efficiency of capital, but he was unable to explain the reason for this cyclicity. All said and done, he appeared to adhere to Jevons's reasoning by seeking

its source in the fluctuations of agricultural production and in the fact that *there are physical causes for a regular cycle of good and bad harvests*[7] that he did not attempt to analyse. Nonetheless, by placing emphasis on the uncertainties surrounding the decisions made by companies (in determining "effective demand"), he oriented the entire post-Keynesian economy which failed to provide additional answers to the cyclic nature of economic crises.

However, Keynes accepted the neoclassical theory of labour demand based on marginal product and used it to provide elements essential for explaining the "rigidity" of the real wage rate during crises and even for its increase in the short-term. He explained as follows:

> Wide variations are experienced in the volume of employment without any apparent change either in the minimum real demands of labour or in its productivity. Labour is not more truculent in the depression than in the boom – far more it. **Nor is its physical productivity less.** ... labour being readier to accept wage cuts when employment is falling off, **yet real wages inevitably rising in the same circumstances on account of the increasing marginal return to a given capital equipment when output is diminished.**[8]

Curiously, this already advanced explanatory outline appears to have attracted little attention. Proof of this was the persistent denunciation by orthodox economists of the lack of flexibility of the labour market, with "the monopolistic power of the unions" and the existence of minimum wages. Additional proof was provided through the efforts of Keynes's heirs, who sought the source of this "rigidity" in imperfect competition and information (cf. the theories of implicit contracts, the efficiency wage model, labour market segmentation).

With the criticism of neoclassical economic standards (the rejection of the theory of labour supply, the lack of flexibility of wage rates during crises and also the calling into question of Say's law), Keynes's other, even more fundamental contribution was his analysis of the determinants of the volume of labour, especially the function of short-term consumption. His intuition, according to which this function has a decreasing marginal propensity to consume, makes it possible to understand why, during crises, the level of employment does not reach zero. Unfortunately, the analysis of this function went no further than short-term consumption, as otherwise, his admittedly ambiguous analysis of the propensity to consume ("a quite stable function") leads to inconsistencies. Indeed, if the function of consumption is stable (with a decreasing

marginal propensity to consume), the share of income consumed decreases progressively as income increases, and concurrently, the rate of saving (and thus investment) increases regularly. However, this is contrary to the facts observed over the long-term: consumption and investment, corrected for cyclic variations, each represent a relatively constant proportion of national income. Otherwise, if the propensity of society to consume remains constant through time (i.e. different social classes wish to always consume the same percentage of their incomes), it is difficult to understand why working time has decreased substantially over a century or why unemployment subsists. Indeed, if the propensity to consume always remained constant, everything that a country is capable of producing would be consumed simultaneously, and competition would drive companies to produce always more, to the point where all available labour would be employed.

More precisely, the fact that the analysis of consumption remained in the short-term does not allow understanding the evolution of working time, nor can it be a pertinent variable of economic adjustment. This is a major and relatively paradoxical shortcoming of Keynesian analysis, which is above all based on the refutation of (basic) neoclassical theory of individual labour supply, i.e. the working time assumed to be supplied by each worker. However, if along with Keynes, we reject this theory of labour supply, what then determines working time and its variation over the long-term? Is it credible to think that the hypothesis of an optimisation of employees' preferences for labour supply remains roughly acceptable in the long-term but not in the short-term? It would be absurd or at least hard to understand if we considered that the volume of labour depends in the short-run on effective demand (of investment and consumption) and can be subject to large variations, whereas in the long-term everything returns to normal. Thus this volume of labour corresponds to the equalisation of the marginal utility and disutility of labour.

Lastly, it should be added that Keynes's hypothesis of the decreasing marginal propensity to consume, a concave short-term consumption function (confirmed by cross-sectional statistical analyses), results in justifying policies aimed at reducing disparate incomes from the standpoint of optimisation and consumption.

3 The Marxian approach: an unfortunate isolation

We know that the great design of Karl Marx and his friend Friedrich Engels was to understand the movement of history and, more specifically,

to understand the nature and dynamics of the social conflicts that are capable in some circumstances of kindling revolutions and overturning the entire organisation of society. They sought the sources of these dynamics in the social relations of production by which a dominant class "exploits" the labour power of a dominated social class according to forms that have varied throughout history and according to the level of development of productive forces: owner / free man in comparison to slave, feudal lord over his serfs, capitalist over salaried employee. This is why working time occupies a central place in Marx's theoretical work; he uses it to highlight the nature of exploitation of man by man using the capitalist mode of production. To his thinking, the relation of employment comprises an asymmetry of power that can be varied by capitalists in terms of duration and intensity; thus they can influence its supply.

To carry out this analysis, Marx first placed himself in the context of a perfectly competitive economy[9] (excluding the asymmetry of power prevailing in the labour market); then his reasoning proceeded from the labour theory of value espoused by classical economists. His major idea consisted in showing that the wage is not the price of labour – with, implicitly, all the connotations of equity that can be attached to this notion – but the price of labour power. What capitalists buy is not hours of work but a capacity of work from which they can draw as much profit as possible. To this end, they seek to pay this capacity as little as possible but nonetheless at a price sufficient for this capacity to recur, meaning sufficient to raise a family under existing social conditions. Afterwards, the aim is to maximise the value produced by making the worker work efficiently for as long as possible (up to the point where the marginal product equals the wage rate). The difference between the two, wage and added value (gross) realised, constitutes the *surplus value*: the central concept of Marxian reasoning. This can be *absolute* when it stems from the extension of working time, and it can be *relative* when, due to gains of productivity in the economy, working time, during which the capitalist covers the cost price of the labour power, is shortened. In simpler terms, this relative surplus value corresponds to the non-repercussion of gains in productivity on wage rates.[10]

However, for Marx, this quest to maximise profits must lead to ever greater contradictions between workers and capitalists and result in incessantly greater crises of overproduction insofar as it leads to capital that accumulates faster than the evolution of wages. Indeed, on the one hand competition drives capitalists to make the highest possible gains in productivity through implementing technological advances, while on the other, redistributing as few of these gains as possible to employees.

This must inevitably lead to the collapse of capitalism. In fact, Marx did not imagine that the labour movement could achieve partial indexation of wage rates with the evolution of labour productivity, nor did he perceive sufficiently, due to the limited nature of the classical theoretical tools he used and also to the vast expansion of mass production and salaried workforce, that this compression of wages would rapidly reach its limits. Such compression certainly allows companies to invest more over short periods, but it then reduces the purchasing power of consumers and narrows their outlets. In the long-term, the production obtained and the remuneration of work distributed are interdependent (it was seen that the wage rate corresponds to the maximum net average productivity of labour).

Despite his shortcomings and errors, Marx, in the framework of classical economics and especially by drawing inspiration from Sismondi, developed most of the analyses presented in Chapter 3: the power of employers to influence labour supply, the faster growth of profits in comparison to wages that could result from this, the subsequent cyclic crises of production, and so forth. Likewise, the occurrence of long-term unemployment, presented in Chapters 4 and 5, when the dynamics of consumption is lower than that of labour productivity while working time remains unchanged, coincides with Marx's considerations on the development of a *reserve army of unemployed* (or an *industrial reserve army*, as Marx would have it); that is to say, a mass of unemployed that weighs down on wage levels. However, for Marx, lower dynamism in proportion to consumption does not stem from the relative shortage of innovations in consumer goods. Implicitly, it stems from the fact that capitalists seek to limit the amount of wages to the cost of reproduction of the labour power, whereas salaried labour becomes increasingly productive with technical progress. Whatever the case, it was seen in Chapter 5 that a liberal solution to long-term unemployment would lead the unemployed to find recourse in casual and underproductive work in the economy, resulting in the exacerbation of income inequality. It also validates Marx's premises on the relative and even total pauperisation of a section of workers.[11]

Nonetheless, these key analyses of Marx on the "exploitation" of the labour power have remained relatively isolated, especially today, after Marxism has become outmoded following the collapse of the Soviet system. The main reason likely stems from the fact that Marx's thinking was perceived by his heirs as a kind of end of millennium message, driving more towards orthodox reflexes of isolation than to a quest for openness. This has become all the more apparent with the

growing discredit into which "real socialism" has fallen. However, if greater attention is given to the barrier erected between neoclassical and Marxist economists, it can be seen that the former obviously rejected the option of a State-run and -planned economy that initially went as far as eliminating the role of the market in the countries of the Communist Bloc. As for the latter, they refuted this angelic vision of a general and, what is more, optimal equilibrium of every market that excluded all conflictual relations between capital and labour. In particular, they have remained, apart from a few exceptions, viscerally bound to the labour theory of value, convinced that it is the essential tool for laying bare the mechanisms of labour power exploitation. This is so in spite of all the difficulties encountered and never resolved in changing from this notion to that of prices (the problem of converting value into price and vice versa). It is also in spite of the operational advantage represented by marginalist reasoning for understanding economic reality. This led to the rapid forging of the conviction that Marxism and marginalism (reduced to the basic neoclassical model and the liberal policies it inspires) belong to different and totally irreconcilable theoretical paradigms.

In reality, the relation between the classical concept of labour value, used and enhanced by Marx, and neoclassical notions of price and cost, can be easily formulated if we consider that the long- run equilibrium price of a good, P_e, in an open and pure competitive economy with a perfectly homogeneous and mobile labour as a factor of production, corresponds precisely to this notion of labour value: Figure 6.1. It is known that this long-run equilibrium price at least corresponds to the average production cost of companies active on the market for this good and which incorporate the opportunity cost of capital, i.e. the average rate of return in Marx's[12] meaning. It is of small importance that costs are measured, in one case, in an abstract quantity of work and, in another, in monetary terms: this is merely a question of units of measurement. But, as seen previously, most of Marx's analyses can be demonstrated within a marginalist framework.

However, although Marx's key analyses of the exploitation of labour can be confirmed with the microeconomic tools usually used today, the political conclusions that can be drawn are radically different from those of the Communist movement. To eliminate this exploitation, it is unnecessary to nationalise companies – except those in a situation of natural monopoly (or technological monopoly) or which produce merit goods (education, health, etc.) – set up the bureaucratic planning of production, suppress the freedom of enterprise, or abolish the market. Even if companies are nationalised or self-managed, the same imperatives of

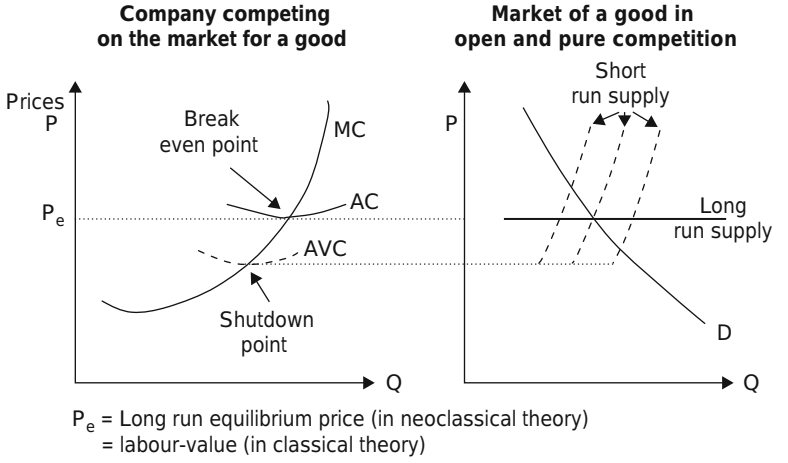

Figure 6.1 Relation between the classical theory of labour value and the neoclassical theory of prices and costs

intervention by the public authorities would prevail to ensure open and fair competition between production units and to guarantee the optimal conditions of remuneration of workers for their labour.[13] In brief, the revolution is avoidable![14] In addition, there is an abyss in Marx between his lengthy though unfinished analysis of capitalist labour relations and his communist political convictions, formulated early on and briefly before he had genuinely begun to study economics.[15] In reality, there is no rigorously established relation of cause and effect between his analysis of the exploitation of workers under capitalist production conditions and his repeated call for the collective appropriation of production resources. In other words, what I put forward is that this collective appropriation is in no way a sufficient or necessary condition for the abolition of the mechanisms governing the exploitation of workers. On the contrary, his later and more pragmatic invitations to labour unions, such as the priority given to the combat to reduce working hours, stem directly from his economic analysis.[16]

That being said, although Communism was one of the two great tragedies of the 20th century, it was by no means an aberration of history. It was a false good response to a real question: that of "labour". This response was as wrong as it appeared natural and logical to many 19th-century social reformers who witnessed the growing polarisation of the economy and society: on the one hand, production resources were heavily concentrated in ever fewer hands; on the other, a growing

number of independent workers were becoming proletarianised, dispossessed of any autonomous means of existence, with only their arms for hire to survive. Thus it appeared tempting and rational to align the ownership of production resources with the collective nature of labour.

4 The Schumpeterian approach: belated recognition

Schumpeter's work has been eclipsed to a large extent for almost half a century by that of Keynes, with the exception of his monumental *History of Economic Analysis* which remains a reference. The slowdown of economic growth during the last quarter of the 20th century and the failure of Keynesian policies to curb the concomitant rise of unemployment have led many economists to re-examine economic cycles, a subject that had been all but abandoned during the Post-War Boom, and therefore logically turn to Joseph Alois Schumpeter. His great design was similar to that of Marx. He wanted to lay bare the mechanisms underlying the evolution of capitalism, though without adhering to the political positions of the followers of the master of *dialectical and historical materialism*, which he frequented when he was a student.

His point of departure was Walrasian general equilibrium, which he discovered as being a stationary equilibrium that reproduced itself identically through time or by "steady reproduction", as Marx would have said. He stated that the key factor capable of stimulating the economy and changing it from a stationary system to an evolutive one consists of the innovations implemented by *entrepreneurs*. They play a central role in Schumpeterian analysis: they set the system in motion. By definition, entrepreneurs are actors that build new production functions (new productive combinations) by innovating; they are distinguished from "exploiters", those that do not innovate and merely reproduce atavistic modes of production and the same type of products. Despite the fact that Schumpeter was not the first to perceive the role of innovations in economic dynamics, he had the great merit of emphasising their importance and theorising around them.

Going further, Schumpeter placed innovations at the origin of the different economic cycles he identified. He named these cycles after the economists that characterised them most: short cycles called Kitchin cycles (lasting about forty months, linked to stock fluctuations), major or business cycles called Juglar cycles (lasting an average of eight to nine years) and long cycles called Kondraktieff cycles (lasting about fifty

years). Since these innovations are of unequal importance, their periods of introduction and diffusion in the economy are variable.

However, his explanation of cycles appears rather too univocal and monistic. Indeed, it is difficult to imagine that the different categories of innovations – major and secondary – emerge sequentially in time to the point of generating three types of cycle, relatively well linked and superposed one over the other: a Kondratieff wave comprises an average of six Juglar cycles, each of which in turn comprises three Kitchin cycles, according to Schumpeter on the basis of statistical observations. For the rest, his conclusion is very fatalistic: these cycles, with their phases of expansion and depression, belong to economic evolution like day and night belong to daily life.

If one judges that different innovations of unequal importance more likely occur relatively discontinuously and randomly through time, then there would be nothing cyclic about the resulting fluctuations. However, short-run fluctuations, called Juglar cycles, for which proof is firmly established in the economy, present a clearly cyclic nature. But, as we set out to show, although cyclic crises of short-run overproduction and overinvestment can be envisaged only if there is a flow of innovations in the production process and in consumer goods, the basic cause for such crises is the asymmetry of power governing the distribution of added value between wages and profits.

Nowadays, what is remembered most in Schumpeter's work is the role he attributes to major innovations in long-term fluctuations known as Kondratieff waves. However, even if the idea according to which they occur in clusters through time is plausible, it is difficult to see why this occurrence takes place every half century. Consequently, regarding their effects, economists prefer to talk about fluctuations rather than cycles. Lastly, although Schumpeter clearly perceived the impact of innovations in consumer goods on economic dynamics, he did not seek to analyse their specific effects concurrently with those stemming from innovations in the production process. To do so, he would have had to classify the five cases of innovations he identified into two categories, given that the first case he mentions – "the fabrication of a new good" – is not enough in itself to forge one of the two categories. The same new good can find an outlet as a consumer good and as a component in the production process. Thus the railway and most modes of transport can be used to convey passengers (for both work and leisure) and goods. What is more, even for such innovations – common to both categories – there is no reason why they should have symmetrical impacts; that is to say, that the resulting increase in consumption should be perfectly equal to that of labour productivity.

Such a classification of innovations in these two areas of application would have led Schumpeter to underline that entrepreneurs not only build new production functions but also new utility functions for consumers (that impact on their consumption functions). Consequently, long-term economic dynamism can be summed up by adapting a well-known adage:[17] producers propose, consumers dispose. Producers or, more exactly, entrepreneurs propose new production and utility functions (i.e. determine unit wages and the supply of goods), while consumers dispose by their propensity to consume or not to consume (i.e. save) their income.

General Conclusion

Before drawing the final conclusions of this research, let us summarise the analytical approach taken.

Firstly, we started from a factual basis. At the end of the 18th century, the first nations in which the Industrial Revolution took place promulgated the major liberal principles for the labour market. However, from the outset this market revealed itself to be highly conflictual, with employees making recurrent claims for higher wages and shorter working times. This was sometimes achieved by reducing working time in order to raise overall wages and sometimes to combat unemployment, the idea being to share the demand for labour. Finally, after much hesitation and lengthy debate, legislation was passed to grant employees the right to act collectively (to strike and form unions), that is to say, behave as monopolists. Legislation then provided a specific right for the labour market by starting with a limitation of duration. These two characteristics, its highly conflictual nature and this acceptance of monopolistic behaviour, are fundamental in making the labour market an exception that clearly distinguishes it from other markets. However, the basic neoclassical model of this market found in every university manual on microeconomics and political economics does not permit understanding these specific characteristics. Moreover, economists are aware of this since they have produced a large number of alternative models, though none of them have stood out and achieved consensus. Whatever the case, the political (or normative) recommendations stemming from the new theories effectively appear *quite blurred*.[1]

Nonetheless, taking this exception into account, with all its particularities, we have followed a path similar to that of John Maynard Keynes. Like him, we started from a basic neoclassical model of the labour market: we accepted the theory of demand but rejected that of

supply. Then, to calculate the volume of employment (since it cannot correspond to the aggregation of the optimal supply of individuals), we reused his analysis, which explains that it is the propensity to consume (with the well-known "psychological law of consumption") and the rate of new investment that together determine aggregate demand and thus the volume of employment. However, along the way, we parted company with him on two occasions. On the one hand, we took a more direct path than his regarding the rejection of neoclassical theory of labour supply; we followed the path indicated by Adam Smith, a path laid out by Jean-Charles Léonard Sismondi and Karl Marx. On the other hand, we widened the path (we continue with our metaphoric comparisons!) regarding the propensity to consume and global demand and called on a new "entrepreneur" [*sic*], Joseph Alois Schumpeter, to raise the obstacles left by Keynes on his journey. In brief, on our journey we have introduced two key hypotheses, one corrective, the other additive, in the basic neoclassical model.

Let us look at this itinerary in greater detail. We rejected the neoclassical theory of labour supply not because of the imperfection of information presented by Keynes rather unclearly in ten lines in his *General Theory*[2] but due to the inequality of bargaining power between employers and employees; this is our first (corrective) hypothesis. By doing so, we have merely transposed, in economic theory, the long process of awareness by legal experts during the 19th century of the fiction postulated by the principle of the "freedom of choice" of contractors on the labour market and, on the contrary, the relationship of economic dependence pervading it. Adam Smith had already explained that in negotiations held in the labour market,

> The masters can hold out much longer [...] upon the stocks which they have already acquired. Many workmen could not subsist a week, few could subsist a month, and scarce any a year without employment. In the long run the workman may be as necessary to his master as his master is to him; but the necessity is not so immediate.[3]

The consequence of this inequality of bargaining power (which does not stem from or merge with that of imperfect information nor correspond to situations of oligopsony) is that employees do not optimise their choices regarding labour supply, whereas employers are able to influence, to the extent of their interests and the bargaining power they wield, the volume of labour supplied (in duration and intensity) by employees. In other words, demand is in a position to influence labour

supply. Supply is not independent of demand; it is more or less subordinate to it. The labour supply of employees does not therefore take the form of a curve that reflects their optimal choices but a *range* of supply from which employers can draw. It is this feature that makes the labour market so specific and an exception. Even markets for farm produce, where situations of asymmetric balances of power have occurred and continue to occur between farmers and middlemen (wholesalers) and hypermarket distribution, do not result in a subordinated supply of this type. Nor does the case of leasing farmland between farmers and landowners take (now or in the past) exactly this form.

Thus we sought to understand how a market with a demand curve but no supply curve could be represented and function. To achieve this goal, we decided to remain within the framework of traditional microeconomics. Our reasoning was simple. Since all university manuals present the model of labour market equilibrium as one in which each party is independent of the other and negotiates on an equal footing, it was logical and necessary to remain within this model to see, at least initially, what would occur in a situation of asymmetric bargaining power as defined by us. We also found that many economists went far afield in formulating highly developed hypotheses and very technical constructions to find an answer to all the questions raised by the labour market, whereas more immediate and simpler paths, from certain angles, had been blithely ignored without making any effort to explore them beforehand.

Therefore, to understand how such a market functions in the short and long terms without a supply curve, on the basis of traditional microeconomics, we focused on systematically highlighting the interdependence that links markets for goods to that of labour, given that the supply curve for the goods and services of a company in competition and its labour demand curve are the two reciprocal facets of the same function of production. However, curiously, if the break-even and shutdown points appear on the supply curve of the goods of a company in every microeconomics manual, their two equivalences never appear on the labour demand curve (or very rarely and then only partially). Likewise, although the long-term equilibrium price for the competitive market of a good is always specified, its equivalent on the labour market (i.e. the long-run equilibrium wage rate) never appears, whereas it would be pertinent to display it. In our opinion, this is neither due to forgetfulness nor negligence but probably to embarrassment, since if one brings to light this equivalence in the basic neoclassical model of the labour market, how then can involuntary unemployment be explained? In any case, it can no longer be explained by an excessively high wage rate.[4]

Whatever the case, we showed that in the absence of corrective checks, this asymmetric balance of power allows company bosses to forego transferring their productivity gains (obtained through implementing innovations in the production process) to employees' wages, so that profits (and, afterwards, productive investment) can increase faster than wages. However, after a certain period of time, this process leads to a crisis of overproduction/underconsumption corresponding to a Juglar cycle. Thus we revisited the main tenets of the analyses of Sismondi and Marx regarding the "exploitation" of workers and cyclic crises of overproduction. Then, by carrying out a painstaking and systematic examination of the interdependence between markets for goods and that of labour, we showed why the real wage rate does not in fact fall during crises, as neoclassical theory would have us believe; it actually rises. Keynes had already explained that in the case of a crisis, since capital stock remains unchanged in the short term, the contraction of the volume of employment necessarily leads to an increase in the marginal physical product of labour and thus of the real wage rate. But Keynes arrived at this conclusion because he did not burden himself with a supply curve (since he rejected the hypothesis that employees could optimise their choices regarding labour supply), and thus he did not seek a hypothetical point of equilibrium between a demand curve and a labour supply curve that he deemed fictional.

That said, since the volume of employment cannot correspond to the aggregation of individuals' optimal supply of labour as postulated by the basic neoclassical model, we have therefore reutilised Keynes's analyses of global demand, in particular, of the propensity to consume. However, since the publication of the *General Theory*, economists have highlighted contradictory evidence. In the short and very short terms, the household consumption function is effectively concave, just as Keynes hypothesised, with a marginal propensity to consume less: the more a household's income increases, the more its rate of saving rises in parallel. However, over a long period, the consumption function of society is linear: all household incomes increase, but saving rates for each category of income (low, average, high) remain relatively constant through time. In addition, it has been shown that over a long period, productive investment and the stock of capital increase almost proportionally with consumption and production. (In other words, the average productivity of capital remains relatively constant.) After having shown that the interpretations put forward to solve this contradiction were unsatisfactory, using the analyses of Schumpeter regarding the role of innovations in economic fluctuations, we proposed a distinction between two areas

of application: this is our second (additive) hypothesis. Innovations in the production process contribute to curbing falls in marginal factor productivity; however, we showed that innovations in consumer goods and services contribute to curbing the decreased marginal propensity of households to consume. But there is no reason why these two impacts should be equivalent; i.e. that any increase of factor productivity (especially labour) and thus unit income corresponds to the same increase in consumption and global demand. In other words, it is not enough for income to increase in order to make consumption increase in the long-term. Innovations in consumer goods are also necessary; otherwise global demand will stagnate.

In all, it is the relative play between these two categories of innovation[5] that determines the evolution of the volume of labour over a long period. This can be expressed by an increase of this volume and, consequently, of working time; such was the case in France during the 1950s with the massive and fast distribution to households of appliances and equipment, including televisions and, of course, automobiles, with all the goods and services that the latter generate. However, since the last third of the 19th century, the contrary has occurred in most cases, though with a very erratic reduction in working times over the period. This has led us to consider that economic fluctuations over a long period, known as Kondratieff long waves, were necessarily associated with this relative play between the two categories of innovation.

Introducing the effects of innovations in consumer goods and services in the theory of consumer behaviour, consumption and demand helped us to interpret from a microeconomic standpoint the instability through time of consumer preferences and the concavity of the Keynesian consumption function over the short term. It then allowed us to complete Solow's neoclassical growth model, in which, apart from demographic growth, only "technical progress" acts in the long-run. Here again, it is remarkable to observe that microeconomics manuals present the effects of technical progress (i.e. innovations) only with respect to the theory of the production and supply of goods but never with respect to the theory of the consumption and demand for goods, although the analytical approach is almost the same in both cases. Likewise, the determinants of growth (and thus its possible brakes or "rigidities") are dealt with very essentially from the viewpoint of production and rarely from that of consumption (except taking into account the problem of confidence [uncertainty] dear to Keynesians). In our view, this expresses a considerable underestimation (even ignorance) of the role of these innovations linked to consumer goods in economic dynamics. Is this, a priori,

because a consumer can have a very large number of goods available to him, which leads to deducing that any increase in income will automatically be used for consumption? Whatever the case, we believe that this dual impact of technical progress permits refuting Say's law definitively and putting an end to the long-standing controversy between supply-side[6] and demand-side economists. It is true that entrepreneurs are at the inception of economic dynamism through the innovations they introduce, as emphasised by Schumpeter. They build new production functions and, we have added, new functions of utility. Hence the objection of entrepreneurs, as reported and criticised by Jean-Baptiste Say, that *the difficulty comes not from producing, but from selling* is in no way fallacious. Thus we have summed this up by saying that *producers propose while consumers dispose*. In both the short and the long-term, consumers are not passive receptacles or obliged to absorb all productive activity. The underestimation of the role of innovations in consumer goods leads to an equally significant one: that of working time as an essential variable of economic regulation.

Finally, our two hypotheses and the way they have been developed permitted us to fully clarify the questions raised at the outset of describing the issue. This was done by remaining at the broadest level of generality, since we situated ourselves wholly within the basic neoclassical model of pure and perfect competition and general equilibrium, *except for one hypothesis introduced to correct this model*.

- The *first hypothesis* (in this case, corrective) contributed to our understanding from the outset why the labour market has been and remains intrinsically conflictual, without it being possible to find a genuine equivalence in other markets. (In addition, it permitted grasping the source of this ideological whirlpool and the political upheavals that so affected the 19th and 20th centuries in attempts to solve the "social question".)
- Next, the developments stemming from this hypothesis on the interdependence of the goods and labour markets – in particular, on the equivalence between the supply of goods and the demand for labour in the short and long runs – permitted understanding why legislation granted employees the right to unite, that is, to behave as monopolists. Any general increase of nominal wage rates in excess of the possibility provided by the profit margins of companies (given the long-term opportunity cost of their capital) and also higher than the increase in average productivity of labour will be passed on to the long-run equilibrium price of goods and will have no impact

on the volume of employment. At worst, the only thing that can happen is price inflation, which is then corrected by monetary devaluation. Furthermore, historically, labour unions have never considered general wage increases to be detrimental to employment. On the contrary, examples of this are the sudden increases granted in France by the Matignon agreements (1936) and the Grenelle protocol (1968).

- These same developments also contributed to validating the pertinence of the recurrent claims by labour unions to reduce working times; that is, reduce their labour supply during the expansion phases of Juglar cycles in order to increase wages and to regulate the cycle.
- Lastly, the *two hypotheses* permitted validating the reasoning underlying the quest by labour unions to reduce working times to push back unemployment, as they consider that technical progress leads to an increase of productivity that is greater than the increase in consumption. They also permit justifying the legislation formulated in line with this reasoning and passed for this purpose. Furthermore, they provide a key for interpreting the phenomena of social downgrading and increased inequality of incomes since the beginning of the 1980s.

The entire reasoning ended in results which, from the normative standpoint, run contrary to the prescriptions of the basic neoclassical model. Two fundamental issues of economic regulation therefore stand out for short and long periods, respectively:

- That of *sharing added value* between the remuneration of labour and the remuneration of capital. Real wage rates must remain permanently indexed to the average productivity of labour to avoid cyclic economic crises (of the Juglar cycle type). Moreover, we think that the disappearance of these cyclic crises after World War II can be imputed more to the rise of collective bargaining and wage indexing procedures than to Keynesian policies (budgetary and monetary) as such. Conversely, their re-emergence from 1980 onwards seems attributable to the weakening of labour bargaining power.
- That of *sharing labour demand* between individuals by fixing its legal (or basic) duration. The latter must always remain substantially lower than the effective duration (as was the case in France in the 1950s and 1960s) and overtime remunerated at a sufficiently higher rate to always incite companies to reduce such overtime rather than dismiss personnel when the dynamics of consumption becomes structurally

> weaker than that of labour productivity. On the other hand, overtime could have been used to employ job seekers. Thus the increase of unemployment and income inequality in developed countries since the end of the 1960s appears imputable for the most part to this failure to share labour demand. It was from this moment that the threshold triggering the allocation of overtime should have been lowered.

However, although the nature of the labour market requires public measures regarding the duration of salaried work, individual freedom to work more hours remains protected. On the one hand, any person can go to other sectors undergoing strong growth in which companies find it difficult to recruit and thus where working overtime is common practice. On the other hand, this person can always work the hours he pleases, whether jointly or not with a salaried activity: first as a self-employed worker (or entrepreneur); then in the home or for personal furtherance – including for training, studying and creating (in technology, science, literature or art). In reality, this freedom would be strengthened by such a policy designed to rarefy wage labour since, if it permits reducing unemployment – as we have demonstrated – the scope for opportunity will widen for both employees and entrepreneurs.

Notes

Introduction

1. This category includes the markets for staple agricultural crops and money, the latter corresponding to modern monetary and financial markets. Mention can also be made of markets for utilisation rights and those of ownership of natural goods, such as land.
2. Martin Saint-Leon, E., *Histoire des corporations de métiers, depuis leur origine jusqu'à leur suppression en 1791, suivie d'une étude sur l'évolution de l'idée corporative au XIXe siècle et sur les syndicats professionnels*, 3rd edn, Alcan, Paris, 1922; Coornaert E., *Les corporations en France avant 1789*, 2nd edn, Editions ouvrières, Paris, 1968; Levasseur, E., *Histoire des classes ouvrières et de l'industrie en France avant 1789*, 2 vols, Arthur Rousseau, Paris, 1900, 1901.
3. Fohlen, C., and Bedarida, F., *L'ère des révolutions*, vol. 3 of *Histoire générale du travail* (supervised by Parias L.-H.), 2nd edn, amended, Nouvelle Librairie de France, Paris, 2000. Braudel, F., and Labrousse, E. (supervisor), *Histoire économique et sociale de la France*, vols 3 and 4, PUF, Paris, 1976, 1979, 1980. Perrot, M., *Les ouvriers en grève: France 1871–1890*, 2 vols, Mouton, Paris, 1973. Fridenson, P., and Reynaud, B. (supervisor), *La France et le temps de travail (1814–2004)*, Odile Jacob, Paris, 2004. Cross, G., *A quest for time. The reduction of work in Britain and France, 1840–1940*, University of California Press, Berkeley, 1989.
4. In France the Catholic socialist movement should not be confounded with a left-wing movement. For the most part, it was intrinsically conservative in its approach.
5. Cf., et al., those of Prélot, M., and Lescuyer, G., *Histoire des idées politiques*, 13th edn, Dalloz, Paris, 1997.
6. This right can sometimes be limited for certain categories of employees, such as civil servants.
7. Aubin, G., and Bouveresse, J., *Introduction historique au droit du travail*, PUF, Paris, 1995. Le Crom, J.-P. (supervisor), *Deux siècles de droit du travail: L'histoire par les lois*, Éditions de l'Atelier, Paris 1998. Le Goff, J., *Du silence à la parole: Une histoire du droit du travail des années 1830 à nos jours*, Presses universitaires de Rennes, 2004. Le Goff J., *Droit du travail et société*, vol. 1: *Les relations individuelles de travail*; vol. 2: *Les relations collectives de travail*, Presses universitaires de Rennes, 2001, 2002. Pelissier, J., Auzero, G., and Dockès, E., *Droit du travail*, 26th edn, Dalloz, Paris 2011. Rivero, J., and Savatier, J., *Droit du travail*, PUF, Paris, 1993.
8. Examples include the quotas set for certain professions subject to obligations of public service under government authority and milk quotas to regulate the market.
9. Borjas, G. D., *Labor Economics*, 4th edn, McGraw-Hill, Boston, 2008; Cahuc, P., and Zylberberg, A., *Labor Economics*, MIT Press, Cambridge (MA.), London, 2004; Ehrenberg, R., and Smith, R. S., *Modern Labor Economics*, 9th edn, Addison Wesley, Boston, 2006; Gazier, B., *Économie du travail et de l'emploi*, 2nd edn, Dalloz, Paris, 1992; Perrot, A., *Les nouvelles théories du marché du*

travail, La Découverte, Paris, 1995. Redor, D., *Économie du travail et de l'emploi*, Montchrestien, Paris, 1999; Smith, S., *Labour Economics*, 2nd edn, Routledge, London, 2003; Tremblay, D.-G., *Économie du travail: Les réalités et les approches théoriques*, 4th edn, Éditions Saint-Martin / Télé-Université, Montréal, 2004.

10. Jurists, of all the professionals working in the field of economics and social sciences, have undoubtedly been (and remain) confronted most concretely by the labour market.
11. By unit income is meant all income (of labour, capital, etc.) generated by unit of time.
12. Note that our hypothesis has nothing to do with other proposed hypotheses of the imperfection of the labour market, such as the *asymmetry of information* or *situations of monopsony or oligopsony*. Likewise, it should not be confounded with the *indivisibilities* normally inherent to labour demand; i.e. production processes lead companies to impose common (and thus rigid) working times and durations for all employees.
13. Today, when reflecting on the labour market, it is generally forgotten that it is to a great extent "artificial" in that it is governed by specific laws that prevent one from knowing its real nature and understanding its essence. Also, certain economists are led to consider that in the absence of such a legal framework, the labour market would be no more conflictual than it is already but would be improved!

1 The "Social Question" since the 19th Century

1. Nonetheless, here we are talking not of macroeconomic magnitudes but of a series of socio-economic or socio-legal characteristics.
2. According to the expression of Patrick Fridenson, "Travail, temps", 299, in Stanziani, A., *Dictionnaire de l'économie-droit, XVIIIe–XXe siècle*, Paris, LGDJ, 2007. This omission probably stems from the fact that, according to us, studies of this history reveal a certain number of recurrent claims that can be perceived as a challenge to common sense, since they are counter-intuitive, and also as a challenge to economic science.
3. Mottez, B., "Le mouvement ouvrier", in *Histoire générale du travail* (supervised by Parias, L.-H.), vol. 4, *La civilisation industrielle (de 1914 à nos jours)* (supervised by Touraine, A.), Nouvelle Librairie de France, Paris, 1962, 170.
4. Smith, A., *An Inquiry into the Nature and Causes of the Wealth of Nations*, Clarendon Press, Oxford (new edn 1976), 1776, vol. I, book I, ch. VIII, 83–84.
5. Ibid., 84.
6. Say, J.-B., *Traité d'économie politique*, 1st edn, 1803, reissued by Calmann-Levy, Paris, 1982, 383–385.
7. Hirigoyen, M.-F., *Le harcèlement moral, la violence perverse au quotidien*, Syros, Paris, 1998. Some 300,000 copies of this book were sold in France within two years, and it has been translated into 15 languages.
8. European Foundation for the Improvement of Living and Working Conditions (EUROFOUND), *Fourth European Working Conditions Survey*, Office for Official Publications of the European Communities, Luxembourg, 2007.
9. Aubin, G., and Bouveresse, J., op. cit., 80.
10. Ibid., 103 (cited by the authors).

11. Lyon-Caen, G., Pelissier, J., and Supiot, A., *Droit du travail*, Dalloz, Paris, 1998, 7.
12. This worker's logbook was a kind of passport that the workers had to carry around with them in order not to be considered vagabonds. The logbook mentioned the worker's identity and physical description. It had to be signed by a police superintendent or the municipal authorities every time a worker changed his place of residence. It also stipulated that the worker was free of any debt to a former employer.
13. Kaplan, S. L., *La fin des corporations*, Fayard, Paris, 2001.
14. The notion of *economic dependence* can also be found in business law and criminal law, though with different meanings; regarding companies, it is either the abusive use of a dominant position (monopoly, secret agreement or cartel) or abusive behaviour regarding clients or suppliers placed in a position where they have no alternative.
15. Lyon-Caen, G., Pelissier, J., and Supiot, A., op. cit., 113–133.
16. Rivero, J., and Savatier, J., op. cit., 78–79; emphasis in the original.
17. Lyon-Caen, G., Pelissier, J., and Supiot, A., op. cit., 118.
18. Pelissier, J., Auzero, G., and Dockes, E., *Droit du travail*, 26th edn, Dalloz, Paris, 2011, 3–5 ; emphasis in the original.
19. Villermé, L.-R., *Tableau de l'état physique et moral des ouvriers employés dans les manufactures de coton, de laine et de soie*, J. Renouard et Cie, Paris, 1840, vol. 2, 318.
20. Asselain, J.-C., *Histoire économique. De la révolution industrielle à la première guerre mondiale*, Presses de la FNSP et Dalloz, Paris, 1985, 293.
21. Ibid., 295.
22. Ibid., 289–290.
23. Ibid., 288; emphasis in the original. Furthermore, in this citation, the word "profit" is taken in its accounting meaning and not in the meaning of economic theory. (These are profits that include the opportunity cost of capital.)
24. Bedarida, F., "La civilisation industrielle à la conquête du monde", in *Histoire générale du travail* (supervised by Parias, L.-H.), vol. 3, *L'ère des révolutions (1765–1914)* (by Fohlen, C., and Bedarida, F.), 263.
25. This paragraph relies mainly on the synthesising work of Éric Bosserelle, *Le cycle de Kondratieff, théories et controverses*, Masson, Paris, 1994.
26. Villermé, L.-R., op. cit., vol. 2, 301–302.
27. Rae, J., *Eight Hours for Work*, London, 1894, ch. 1.
28. Rist, C., *Réglementation légale de la journée de travail de l'ouvrier adulte en France*, PhD thesis, University of Paris, L. Larose, 1898; Villermé, L.-R., op. cit.; Guedj, F., and Vindt, G., *Le temps de travail: Une histoire conflictuelle*, Syros, Paris, 1997. It is noteworthy that the evaluation of this duration is highly problematic, not so much because of the imprecision of statistical sources but because this duration is subject to considerable variations due to Juglar (cf. §2.1 above) or short-run business cycles during which phases of prosperity and depression alternate over periods of 8 to 9 years.
29. Villermé, L.-R., op. cit., vol. 2, 301–302.
30. De Vries, J., *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present*, Cambridge, Cambridge University Press, 2008.
31. Marchand, O., and Thelot, C., *Le travail en France (1800–2000)*, Nathan, 1997, 240–241.

32. The tables published by Marchand and Thelot detail working time for all active members of the population and separately for workers in agriculture, industry and services. However, these figures concern persons employed full-time and part time and salaried and non-salaried employees. Thus, here, only working time in industry and construction is taken into account insofar as they are the sectors most representative of the active wage-earning population.
33. In 2006, the annual salaried working time (full and part time) in France was 1,451 hours (1,541 hours for all persons in work; cf. *INSEE première*, no. 1273, January 2010). These figures cannot be compared with those of Marchand and Thelot as they are based on different calculation methods.
34. Cited by Guedj, F., and Vindt, G., op. cit., 106.
35. Cited by Fridenson, P., and Reynaud, B., op. cit., 7.
36. This means that we keep the same elasticity for the curve in Figure 1.1 as that observed between 1881 and 1931 (and even 1938); i.e. the relative reduction of working time remains proportional to the relative increase in the hourly cost of labour from the period 1881–1931 up to today. By mathematical adjustment, we obtain the following function, linking working time l to its hourly cost *w*: $8047/w^{0.5334}$; with a constant elasticity: $|\varepsilon| = 0.5334$. The latter value expresses the fact that the increase in labour productivity (which can be assimilated with the hourly cost of labour) from 1881 to 1931 (and even 1938) was shared more or less equally between the reduction of working time and the increase in income. The sole purpose of this calculation is to underline how considerable the reduction of working time was between 1880 and World War II and how weak it was during the second half of the 20th century.
37. This increase is not shown for the entire active population since it is offset by the large population of small farmers whose working time has continued to decrease according to the estimations of Marchand and Thelot.
38. Asselain, J.-C., *Histoire économique du XXe siècle*, Presses de Sciences Po. and Dalloz, Paris, 1995, 90–93.
39. Aguet, J.-P., *Contribution à l'histoire du mouvement ouvrier français: Les grèves sous la Monarchie de Juillet* (1830–1847), PhD thesis, University of Lausanne, Droz, 1954.
40. Cited by Le Goff, J., *Droit du travail et société*, vol. 2: *Les relations collectives de travail*, Presses universitaires de Rennes, 2002, 265.
41. Perrot, M., *Les ouvriers en grève (France 1871–1990)*, Mouton, Paris, 1973, 262–264.
42. Ibid., 283–285.
43. Ibid., 285–288. F. Guizot (1787–1874) was a minister for almost twenty years under the July Monarchy (1830–1848), seven of which he spent as head of government, from 1840 to the Revolution of February 1848. He was a typical representative of oligarchic liberalism.
44. The decree of 2 March 1848 limited the working day to 10 hours in Paris and 11 in the provinces. In September 1848 this limit was pushed back to 12 hours. Cf. §5.1.1 below.
45. Rist, C., op. cit., 31–35. Mention can also be made of the testimony of the Member of Parliament Alcan, an engineer, on the workers' reaction to the decree of 2 March 1848: *This decree was welcomed and adopted with great joy.*

This general expression does not do justice to what actually happened; it has to be said that it was greeted with delirious glee in the manufacturing centres; it was a genuine deliverance since terrible abuse has been made of laisser-faire, anything goes. Cited by C. Rist, "La durée du travail dans l'industrie française de 1820 à 1870", in *Revue d'économie politique*, no. 11, 1897, 380; *Le Moniteur universel*, 2296, session of 4 Sept. 1848 of the Assemblée Nationale.

46. Ibid., 29; see also 30, 34, 117ff.
47. Jarrige, F., and Reynaud, B., "La durée du travail, la norme et les usages en 1848", *Genèses 85*, December 2011, 79.
48. Cited by Perrot, M., op. cit., 284.
49. Cited by Dommanget, M., *Histoire du premier mai*, Société universitaire d'édition et de librairie, Paris, 1953, 116–117; Rist, C., op. cit.
50. CGT, *Affiches et luttes syndicales de la CGT*, Société des nouvelles des éditions du Chêne, Paris, 1978. The CGT, the *Confédération générale du travail* (General Federation of Labour Unions), was founded in 1895.
51. Cf. Gazier, B., op. cit., 179–180. For figures on the estimation of the elasticity of labour, see ch. 3, n. 13.
52. Villermé, L.-R., op. cit., vol. 2, 85.
53. Marx, K., 1867, *Le Capital*, book I, ch. XX.
54. Samuelson, P. A., *Economics*, 11th edn, McGraw-Hill, New York, 1980, 539.
55. Office du travail, *Enquête sur les salaires et la durée du travail dans l'industrie française*, Imprimerie nationale, Paris 1897, vol. IV, 38–39.
56. Perrot, M., op. cit., 288. Note that this author completed his work at the beginning of the 1970s, a time when a relatively cursory interpretation by Keynes held sway: unemployment could stem only from insufficient global demand, and therefore to absorb it, all that is necessary is to implement budgetary and monetary policy to stimulate global demand. Since then, this optimistic vision has been dampened by the facts. We see in the following chapters that this intuitive reasoning of the labour movement is far from lacking pertinence.
57. This explains the famous slogan of Nicolas Sarkozy during his 2007 presidential campaign in France, "Work more to earn more", a fallacious slogan that created several illusions. Whatever the case, he would have had no chance of being listened to by the working classes of the 19th century or those of the first half of the 20th.
58. Cited by Guedj, F., and Vindt, G., op. cit., 61. Note that this citation also appears to express another intuition. When the dynamic of consumption is weaker than that of labour productivity, work sharing – which is the subject of this text – is the most efficient means of optimising global consumer demand.
59. Thompson, E. P., *The Making of the English Working Class*, Victor Gollancz, London, 1980, ch. II, §9.
60. Three types of crisis combine to define the 1930s. The first corresponds to the period between the two world wars, which is considered a slow-growth phase of a Kondratieff wave. The second corresponds to the Wall Street crash in October 1929 or the depression phase of a Juglar business cycle. The third corresponds to an exceptionally brutal financial crisis triggered by unconsidered risk taking by banks.
61. Sauvy, A., *Histoire économique de la France entre les deux guerres*, vol. 2 (1931–1939), Fayard, Paris, 1967, 367.

62. Aznar, G., *Travailler moins pour travailler tous*, Syros, Paris, 1993.
63. Perrot, M. op. cit., 288.
64. The economist Charles Gide noted in 1888 (in articles published in the *Revue d'économie politique* and in *L'émancipation*; cf. *Les œuvres de Charles Gide*, reissued by L'Harmattan) that since September 1848 in France, the maximum working day remained fixed at 12 hours; it was 10 hours (in a working week limited to five and a half days) in England and rarely exceeded 9 hours in the United States. Gide also observed that in these two countries, where the working day was shorter, labour productivity was highest and wages were also the highest. Cross-checking different statistics shows that during one century (to about 1982), US employees worked fewer (even far fewer) hours than those in France.
65. Cited by Guedj, F., and Vindt, G., op. cit., 73.
66. Bodiguel, J.-L., *La réduction du temps de travail*, Les éditions ouvrières, 1968, 40–43.
67. *Le Moniteur universel*, 13 January 1841.
68. Martin Saint-Léon, E., op. cit., in the Conclusion of the 2nd edn, 1909, 766.
69. Le Goff, J., *Du silence à la parole: Une histoire du droit du travail des années 1830 à nos jours*, PUR, Rennes, 2004; Fridenson, P., and Reynaud, B., op. cit.
70. Rist, C., op. cit., 31–32, and Rae, J., op. cit., ch. VII.
71. Rist, C., op. cit., 51–52, 60.
72. Levasseur, E., *Questions ouvrières et industrielles en France sous la Troisième République*, Arthur Rousseau, Paris, 1907, 440.
73. Cited by Martin Saint-Léon, E., op. cit., 2nd edn, 1909, 763.
74. Sauvy, A., op. cit., vol. 2.; Asselain, J.-C., *Histoire économique de la France du XVIIIe siècle à nos jours*, Le Seuil, Paris, 1984, vol. 2, 58–69.
75. This point of view was clearly expressed by Paul A. Samuelson, who denounced the "lump-of-labour fallacy" regarding the belief, according to him, of unionised employees "who think the total amount of work to be done is constant in the short run" (cf. *Economics*, 11th edn, McGraw-Hill, New York, 1980, 540–541).
76. We acknowledge an intellectual debt to this school.
77. Perrot, M. op. cit., 285. The resolution of the International Working Men's Association, in September 1866 at Geneva, asserted that the reduction of working time is the *prerequisite…of emancipation* (cited by Marx in *Capital*, vol. I, ch. X, §VII).
78. Cf.: Prélot, M., and Lescuyer, G., *Histoire des idées politiques*, 13th edn, Dalloz, Paris, 1997.
79. This paragraph is mainly based on vols 3 and 4 of the *Histoire générale du travail*, op. cit.; the works of Le Crom, J.-P. (supervisor), op. cit., 1998; and Le Goff, J., op. cit., 2004.
80. Coornaert, E., *Les corporations en France avant 1789*, Gallimard, Paris, 1941, 261.
81. These were terms employed by the jurists. The law of 18 November 1814 certainly respected Sunday as a rest day – a custom dating from the Ancien Régime – in application of the constitutional charter of 4 June 1814, which declared Catholicism as the religion of the state. However, after the abrogation of this constitutional principle in the charter of 1830, the customary use of Sunday as a day of rest lost its legal force and was abandoned.

82. Bédarida, F., *Histoire de la Grande Bretagne*, vol. 2, *L'Angleterre triomphante* (1832–1914), Hatier, Paris, 1974. Marx employed his well-known irony to describe the combat of English workers to earn the right to work a 10-hour day and the resistance put up by employers and politicians (Marx, *Capital*, vol. I, ch. X, §VI).
83. Taft, P., and Ross, P., "American labor violence", in Graham, H. D., and Gurr, T. R. (supervisor), *The history of violence in America*, Bantam, New York, 1969.
84. Bedarida, F., "La civilisation industrielle à la conquête du monde", in *Histoire générale du travail* (supervised by Parias L.-H.), vol. 3, *L'ère des révolutions (1765–1914)* (by Fohlen, C., and Bedarida, F.), 369.
85. Ibid., 371.
86. According to the words of Georges Friedmann and Jean-Daniel Reynaud, in the Postface of vol. 4 of the *Histoire générale du travail*, op. cit., 350.
87. In 1936, labour unions demanded the strict application of the 40-hour week due to the rampant unemployment of the time and the obvious barriers to any form of social progress erected by employers. Overtime was granted parsimoniously by the labour inspectorate. By 1946, when the economic, social and political context had changed completely, overtime was accorded almost systematically (always incremented by 15% up to the 48th hour).
88. This 40-hour week was suspended during the war and then re-established in 1950.
89. The OECD (Organisation for Economic Co-operation and Development) studied 34 countries for the average annual hours actually worked per worker. A partial ranking for 2011 is as follows: 1) Netherlands, 1,382; 2) Germany, 1,406; 3) Norway, 1,421; 4) France, 1,482; 11) United Kingdom, 1,625; 18) Japan, 1,728; 23) United States, 1,787; 34) Mexico, 2,250. The ranking has remained relatively stable since 2000 (source: OECD, StatExtracts).
90. Mottez, B., op. cit., 173.
91. Le Goff, J., op. cit.; vol. 1, *Les relations individuelles de travail*, Presses universitaires de Rennes, 2001, 49–50.
92. Mottez, B., op. cit., 170.
93. Ibid., 171.
94. Ibid., 174.
95. Le Goff, J., op. cit., 2001, 536.
96. Pelissier, J., Auzero, G., and Dockes, E., op. cit., 292–297.
97. Pelissier, J., Auzero, G., and Dockes, E., op. cit., 778–815.
98. It should be remembered that the first hypothesis of any economic science assumes the rationality of the actors. This does not mean that the actors never make mistakes but that they cannot reproduce the same errors indefinitely (on the basis of the experiments they perform) and that the time elapsed between them is not so long that any memory of the mistake has been erased.

2 The Neoclassical Model of the Labour Market

1. The household is considered the unit of decision regarding the consumption and supply of productive services. It can be reduced to a single individual.
2. Cahuc, P., and Zylberberg, A., *Économie du travail*, De Boeck Université, Brussels, 1996, 42.

3. Cahuc P., and Zylberberg, A., *Labor Economics*, MIT Press, Cambridge (MA), London, 2004, 48.
4. However, a theoretically stable equilibrium is possible if the slope (in absolute value) of the labour supply curve is steeper than that of demand. Otherwise, the game of the market falls flat.
5. If the available time of an individual (or household) is not saturated by work, there is no reason to prevent them from increasing the share of time devoted to work to obtain a higher wage and therefore avoid placing themself at risk in the case of reductions in real wages (e.g. following a rise in the price of consumer goods).
6. Gould, J. P., and Ferguson, C. E., *Microeconomic Theory*, 5th ed., R.-D. Irwin, 1980, §13.2b.
7. More specifically, the functions of added value can be built as follows: Let us take a company with a given stock of fixed capital, employing different variable factors (in addition to labour) whose prices are constant and which produces an output sold at a given market price.Each value taken by the wage rate corresponds to (1) a specific expansion path for a company (i.e. a specific number of optimal combinations between variable factors [including labour]) making it possible to reach different levels of production; (2) an optimal level of production (thus an equally optimal volume of labour hired) so that the marginal cost (linked to the use of the different variable factors, including labour) equals the market price of the output.Conversely, any volume of labour employed by the company can be linked to (1) a certain wage rate (and thus a certain payroll); (2) a certain variable cost (non-labour); all corresponding to an optimal level of production and thus an optimal value produced, that is, once again, an *optimal gross added value*.
8. Indeed, if *all* the companies (of a sector of production) require more from a factor because its price has fallen, we can no longer consider that the sale price of the resulting production (output) remains fixed as if for a single company. This is especially the case if the factors are as important as labour and capital. This sale price will decrease, as will the value of marginal productivity (of the factor) for all companies. Therefore market demand for a factor of production will be more inelastic than demand from a single company.
9. Minimum wages are included in collective agreements that are initially concluded by unions representing a professional branch. The State can then extend these agreements to all the companies of the sector by issuing a *ministerial ruling* (*extension* procedure). In France the government can also extend these agreements to other branches that were hitherto not subject to them (*widening* procedure).
10. There is only one case where union action and the introduction of minimum wages can have a positive effect on both the wage rate and the volume of employment: when companies are in a situation of *monopsony* (or *oligopsony*) on the labour market (see §4.1).
11. It should be underlined that the closed shop system run by trade unions was not at all prevalent in France, contrary to the UK and the USA, where it is now forbidden.
12. Atomicity in a market means the presence of a large number of suppliers and demanders so that nobody can influence prices.

13. For a presentation of these models, cf. Cahuc, P., and Zylberberg, A., op. cit., 2004, chs. 6–7.

3 The Asymmetry of Bargaining Power

1. Thus, nowadays, when a company is being wound up, the employees belong to those creditors having highest priority, almost greater than all the others. Moreover, employers take out specific insurance to honour under any circumstances their commitments to pay for any work supplied.
2. Obviously, an employee in possession of considerable human capital will be less dependent than one that possesses little. This is reflected in the levels of remuneration received.
3. In contrast, independent workers cannot benefit from this guarantee but are free to fix the duration (and intensity) of their work.
4. By short period is meant a period of time during which the stock of capital varies but in which consumption (corrected for cyclic variations) can be considered roughly to vary in proportion to the (hourly) unit wage. However, in the long-run, consumption is no longer considered to vary in proportion to the unit wage. Ch. 4 clarifies the meaning of this point.
5. It should be recalled that in France, striking was considered to be an offence punishable by imprisonment until 1864 and as a breach of contract liable to dismissal up to the end of World War II. Lastly, unions were not legalised until 1884.
6. It can be shown that if the working time limit, l_{B2}, of the employees of category no. 2 is shorter than the optimal duration, l_{e1}, of category no. 1, the global effect of a general extension of working time is uncertain as it can be shorter than the sum of optimal durations, l_e. This will depend on the number of employees belonging to category 1 and to category 2, respectively. However, if l_{B2} is longer than l_{e1}, the global effect of a general increase of working time will certainly be greater than the sum of the individual optimal durations, whatever the number of employees belonging to each of the two categories, 1 and 2.
7. Cf. Vercherand, J., "Analyse économique du syndicalisme agricole. Une typologie comparative à partir des défaillances de marché", in *Economie rurale*, no. 312, July–August 2009, 93–109.
8. In the tenancy contract, the landowner received money in return for leasing land and buildings. For sharecroppers, however, the landlord deducted half (a third after 1946) of the sharecropper's production in return for leasing the land, buildings and, partially, the operating capital. Prevalent at the beginning of the 19th century, sharecropping has almost disappeared today in France.
9. Thus, in 1946, the US-imposed land reform in Japan led to redistribution of land to small farmers and considerable reduction of the tithes collected from them by major landowners.
10. This condition signifies concretely that real production costs in mining and agriculture remain constant in the long-run if demand increases (for a given level of technology).
11. In the economic literature this result corresponds to the "factor-price frontier".
12. Cayatte, J.-L., *Économie du travail*, Dalloz, Paris, 1989, 178–179.

13. Gazier, B., op. cit., 179–180. The measured elasticity of labour demand by companies varies from 1 to 0.1, with most situations being inelastic. The elasticity of global labour demand, all companies and categories of labour confounded, is in the region of |0.3|.
14. In as much as their indifference maps (preferences between income from labour or leisure) lead them to these ends, given the numerous parameters affecting them.
15. This interdependence cannot be neglected from the moment that employees and the mass production they generate start to become significant in the total active population and the global production of a country.
16. To facilitate graphic illustration, this technical progress is assumed to be neutral from the standpoint of utilising the factor of labour in companies. This means that it is represented only by a vertical translation of their production functions. Concretely, according to the effect of technical progress, the optimal volume of labour (corresponding to the new long-run equilibrium wage rate) for each company will remain unchanged, so the total number of companies in the economy will not change either. This hypothesis is not essential for the demonstration; it merely permits showing in Figure 3.9 that points E and E' are located on the same vertical, whereas point B remains the same.
17. Obviously, consumption does not rely only on wages; nor does it concern all wages. A share of property income can be consumed and a share of wages can be saved. However, since the distribution of an estate between individuals is even more unequal than that of income from labour, any increase in the share of added value belonging to the owners of the capital – to the detriment of that pertaining to the employees – can only weaken the *average* propensity to consume the national income, all other things being equal (provided that we retain the hypothesis that society's *marginal* propensity to consume decreases when income increases). Since, in parallel, the increase in the profitability of capital necessarily leads to an increase in the rate of investment of companies, there will be a rift between the evolution of the *average* propensity to consume (which diminishes) and that of production capacities (which, proportionally, grow more than the national income). Therefore the distribution of capital will be perfectly identical to that of wage income; this rift will undoubtedly narrow, but it will remain. However, in this case, one would be justified in questioning the reality of the asymmetry of power or, at least, the way it functions.
18. Kuznets, S., *National Product Since 1869*, Arno Press, New York (new edn 1975), 1946. This means that the average productivity of capital remains relatively constant over a long period even if the stock of capital increases due to technical progress. The constancy of capital/GNP and investment/consumption ratios belongs to the main "stylised facts" of the economy according to the terminology coined by Kaldor.
19. Here we are reasoning in a closed economy or by assuming an open economy where all countries have the same asymmetry of power between employers and employees in the distribution of the added value produced. Mixed situations of an open economy, where certain countries allow their labour markets to function asymmetrically and others have balanced them, will not be dealt with here.

20. A slightly different scenario can occur, leading to the same type of crisis. At the end of the expansionary phase, the tensions affecting the job market may improve the balance of power in favour of employees vis-à-vis employers and lead to wage increases. This will occur all the more if legal barriers against the formation of trade unions are lifted. This belated catching up in wages certainly reduces the rift that had occurred previously between the evolution of profits (and the production capacities of companies) and that of consumption but does not eliminate it. On the contrary, this late increase in the share of added value attributed to employees causes a brutal slump in the profitability of capital invested in companies, therefore encouraging them in turn to stop uncontrolled investment even more rapidly before overproduction occurs. Obviously, this type of crisis can break at the same time as a stock market crash linked to speculation tied to the growth of surplus profits.
21. This hypothesis of losses (with $P_2 < P_e$) is not essential, in the first wave of contraction of global demand. However, it facilitates graphic representation.
22. Admittedly, we know that a demand for a factor stems from its marginal product value in companies. Thus, when the sale price of the output charged by companies falls, it causes the demand curve of the factor to fall in the same proportion. When all the prices of goods fall, the same occurs for global labour demand (expressed in nominal value). However, if we reason in terms of wages in real value, that is, in purchasing power – which is what should be done – the global labour demand (in nominal value) must be corrected by the general fall in prices, which amounts to not taking the general fall of prices into account. Labour demand, in fact, should be viewed in terms of physical values (i.e. the physical average and marginal products of labour). Naturally, this reasoning would be erroneous if we examined labour demand only for a *specific* sector of the economy.
23. Keynes, J. M., *The General Theory of Employment, Interest and Money*, Macmillan / Saint Martin's Press, London, 1936 (new edn 1970), 4–5: *the pure theory of what determines the actual employment of the available resources has seldom been examined in great detail… not that the topic has been overlooked, but that the fundamental theory underlying it has been deemed so simple and obvious that it has received, at the most, a bare mention*.
24. The term "rigidity" is ambiguous; it gives rise to confusion. It is even inappropriate in the strict sense, since wage rates increase during depressions.
25. Cf. Kuznets, S., op. cit.
26. Of course, if working time were halved, wages would not increase twofold! It is only at the margin that the reduction of this working time can lead to a global rise in wages (provided that beforehand the wage rate did not follow the evolution of labour productivity). As can be seen in Figure 3.9 (cf. §3.2 above), the volume of work must not be lower than the abscissa of point E – that is, than L_e. Otherwise, global wages will decrease.

4 The Dual Impact of Technical Progress

1. Keynes, J. M., op. cit., 30.
2. Kuznets, S., op. cit.
3. Schumpeter, J. A., *Business cycles*, McGraw-Hill, New York, 1939.

4. Keynes, J. M., op. cit., 96.
5. Ibid., 120. It is noteworthy that the second part of this citation does not necessarily verify the first part – that is, that the marginal propensity to consume (mpc) decreases. Indeed, in the case of an affine consumption function, of type: $C = C_0 + cR$, with constants $C_0 > 0$ and $0 < c < 1$, the mpc, c, is constant although the proportion of income consumed, C/R, decreases. Whatever the case, whether the consumption function is concave with decreasing mpc, as Keynes hypothesised, or whether it is simply affine with a constant mpc, does not change anything as we shall see regarding the problem of the contradiction between short- and long-run consumption functions.
6. Ibid., 97.
7. Ibid., 97–98. This means that an economic depression cannot go lower than a savings threshold, i.e., the level of national income at which the global savings of the community become nil.
8. Ibid., 251–252.
9. Abraham-Frois, G., *Dynamique économique*, 9th edn, Dalloz, Paris, 2002, 100.
10. For each level (or tranche) of income, we find spendthrift households, which do not save, and thrifty ones, which save. The consumer behaviour of all households is therefore expressed by a banana shaped scatter plot (not shown in Figure 4.1). This plot allows us to deduce an *average* consumption curve, as a function of level of income, resulting in curve C_1 for an observation made at instant 1 (and C_2 for an observation made at instant 2).
11. For a presentation of these analyses, see Abraham-Frois, G., op. cit., 104–108.
12. Ibid., 114–131.
13. It should be added that opening an economy to free trade, insofar as it lowers the volume of labour required to obtain the same quantity of commodities (cf. Ricardo's law of comparative advantages), can be considered in this analysis as exerting effects equivalent to innovations in the production process.
14. Obviously, the same concrete innovation can be used in both the production process and in a household as a consumer good, though their impacts are different. Furthermore, this analysis of the role of innovations in consumer goods concerns *private* goods. It could also apply to *public* goods, though this is outside our scope of reasoning: the characteristic of this type of good is that it is supplied in bulk to consumers. Therefore, structurally, any variation in its production (supply) by public authorities leads to an identical variation of consumption by users.
15. It should be remembered that the characteristics of money allow each individual to *anticipate* a future expense on consumption by turning to credit (creating money) or to *defer* spending their present income by saving (function of reserving the value of money). This all provides a certain level of independence in consumer behaviours in relation to production behaviours (thus regarding the income distributed through productive activity).
16. The modification of working conditions (linked to innovations in the production process) and the development of knowledge of individuals (which also amounts to innovations in this process) has a parallel effect on the evolution of tastes (and preferences). Examples of this are alcohol and antidepressant consumption linked to harsh and stressful working conditions and the acquisition of new knowledge on the positive or negative effects of a food on health.

17. Otherwise, for such an increase in the production-consumption of public goods to be detrimental for that of private goods, the former must be perfectly substitutable or antagonistic for the latter; i.e., the preferences of households must be linear or concave. These preferences are generally considered convex: households want to have a bit of both. Public and private goods both replace and complement each other.
18. This result is understood from the strict standpoint of consumption since for production it will not necessarily be maximised by strictly equal incomes (except if labour is considered to be perfectly homogeneous, the economy perfectly competitive and there is no risk for the entrepreneur, or temporary rent from innovation).
19. The interest rate certainly influences the level of consumption (and saving) in the short-run; when it is low, households are encouraged to advance their consumer expenses by turning to credit (for property and consumption). On the other hand, when it is high, households are encouraged to delay their expenses; the corresponding saving is carried out either a posteriori (of spending), by reimbursing the principal of the loan, or a priori. The variation of the interest rate in the short-run is expressed by a fluctuation of the *cross-sectional* consumption function on either side of the same function corresponding to the long-term interest rate (corrected for cyclic variations).
20. Becker, G. S., "A theory of the allocation of time", *Economic Journal* 75, Sept. 1965.
21. $\varepsilon_{C/r} = (\Delta C/C)/(\Delta r/r)$ (we assimilate unit incomes r with wage rate w_e).
22. Let us assume that at a given instant of period 2, investment I_2 undergoes an increase ΔI. Since the average productivity of capital is relatively constant, the result is an increase ΔY of production Y_{e2} of the same percentage: $\Delta Y/Y_{e2} = \Delta I/I_2$. The increase of income distributed, ΔR, following this increase of production ΔY, is split between increased consumption and saving: $\Delta Y = \Delta R = \Delta C + \Delta S$. Let us examine this more specifically on the basis of the left-hand side of Figure 4.5. The increase in consumption will be, *in percentage*, lower than that of income, production or investment (we focus on consumption function C_2 of period 2): $\Delta C/C_{e2} < \Delta Y/Y_{e2}$ or, likewise, $\Delta C/C_{e2} < \Delta I/I_2$. On the other hand, the increase of saving will be higher *in percentage*: $\Delta S/S_2 > \Delta I/I_2$. This greater augmentation, proportionally, of saving ($\Delta S > \Delta I$, since $S_2 = I_2$) will correspond, in the total investment by companies, to an increase of their inventory (in unsold finished products and/or raw materials and non-processed semi-finished products): ΔSt. The macroeconomic equality between saving and investment is therefore written as $S_2 + \Delta S = I_2 + \Delta I + \Delta St$. This increase in inventory (unsold goods and unused factors) will drive companies to revise their programme of production and productive investments.

    Conversely, if at a given moment of period 2, investment I_2 undergoes a contraction ΔI, production Y_{e2} will be subject to a fall ΔY of the same percentage; likewise for income R. However, this results in a smaller reduction of consumption in percentage, whereas saving will shrink more considerably (still in percentage). This will lead to a corresponding reduction of company inventory. This gives us $-\Delta Y = -\Delta R = -(\Delta C + \Delta S)$; $|\Delta S| > |\Delta I|$; $S_2\ \Delta S = I_2\ \Delta I\ \Delta St$. Seeing their inventories shrink, companies will then increase the programmes of production and productive investments. Finally, production reaches equilibrium at Y_{e2}, with a level of inventory (included in the

total investment of companies) corresponding to their normal long-term average operating requirements.

23. Today in developed countries, working time represents less than 15% of the conscious life of a person (a little more if we include secondary and higher education).
24. If no innovations occur in goods, consumption can be considered as a global priority good, whereas saving is a luxury (income elasticity > 1). Therefore the increase of unit incomes (due to innovations in the production process) will mainly benefit saving. This will lead to disequilibrium in the long-run between global saving and global investment (the latter remaining proportional to consumption), hence the initial equilibrium S = I is maintained.
25. In the long-term, the global volume of capital per worker plays no role. Indeed, from the microeconomic standpoint, in a given and invariable technological context, the optimal investment of a company will be reached at the point where its marginal productivity equals its cost. It will not go beyond this point. Furthermore, any increase in wages will be fully reflected in the price of goods and its investments. Consequently, no modification of the price ratio (labour/capital) or, concomitantly, of capital/labour substitution can occur. The optimal capital stock per worker can evolve in the long-run only through the effect of technical progress.
26. See the variant of this scenario (n. 20 of Ch. 3, §3.3): in the case of delayed wage rises, the profitability of capital decreases, revealing a situation of overinvestment even before the occurrence of overproduction.
27. *Le Moniteur universel*, session of 30 August 1848, 2235.
28. Ibid., session of 9 September 1848, 2367–2368.
29. The extension of working time can simply follow (or accompany) the shift in global labour demand during the expansion phase in such a way that the real wage rate remains unchanged. However, this extension can go beyond this concomitance and lead to both a reduction of the real hourly wage rate and a reduction of the real global wage. It should be remembered (1) that the labour demand of a company is generally inelastic, (2) that this price inelasticity increases as a function of the increase in labour demand of companies, sectors and, lastly, the entire economy. Consequently, extending working time, ceteris paribus, will lead to a more than proportional reduction of the real wage rate, so that the global wage will decrease.)
30. De Vries, J., op. cit., ch. 4; Roche, D., *Histoire des choses banales. Naissance de la consommation. XVIIe–XIXe siècle*, Paris, Fayard, 1997.
31. Cited in Berthomieu, C., "La loi et les travaux d'engel", in *Consommation, annales du CREDOC*, Paris, no. 4, 1966, 83 (article by Engel, 1895).
32. This is clearly highlighted by Engel's comment in 1895, and in this respect he was probably the first economist to have identified the effect of innovations on consumption functions.
33. Levasseur, E., *Questions ouvrières et industrielles sous la Troisième République*, 1907, 571.
34. Asselain, J.-C., *Histoire économique du XXe siècle. La réouverture des économies nationales (1939 aux années 1980)*, Presses de Sciences Po and Dalloz, Paris, 1995, 90–93. In 1950, all the belligerent countries with market economies (including West Germany and Japan) had exceeded the levels reached in 1929, sometimes very considerably.

35. The examination of one century of the famous mail order sales catalogue of the company Manufrance of Saint Étienne, from 1885 (first year of issue) until the company was wound up in the 1980s, gives a good indication of the evolution of innovations in consumer goods. This catalogue had always contained a plethora of goods and contained as many as 1,200 pages in 1913.
36. The same phenomenon of catching up affected the formerly planned economies of China and the Soviet Bloc, where consumption was rationed by endemic shortages.
37. INSEE Tables; Bouvier, G., and Pilarski, C., "Soixante ans d'économie française: Des mutations structurelles profondes", in *INSEE première*, no. 1201, July 2008
38. Since these reductions generally occur without any change in the global wage, they lead to sudden increases in the unit cost of labour. In the case of France, this has sometimes resulted in inflation that erodes wages (as in 1936) and in increased productivity at the cost of poorer working conditions and less impact on the reduction of unemployment than that hoped for (in 2000).
39. Interview televised on the national holiday of 14 July 1993.
40. Sauvy, A., op. cit., 1984, *Economica*, vol. 1, 331–332 (this remark was absent in the first edition of 1967). The Edict of Nantes, signed in 1598, put an end to the civil war between Catholics and Protestants in France. Its revocation led to the emigration of two to three hundred thousand Protestants many of whom were leading actors in the economy. This exodus weakened France to the benefit of its northern neighbours: Prussia, the Netherlands, England, etc.
41. Cf. Bouvier, J., (supervisor), *La France en mouvement: 1934–1938*, Champ Vallon, 1986; esp. the article by Asselain, J.-C., "La loi des quarante heures de 1936", 164–192.
42. *Le Monde*, 28 February 1997, forum article by Florin Aftalion.
43. Cited by Asselain, J.-C., op. cit., 1995, 96.
44. Haavelmo's theorem stems directly from this microeconomic hypothesis of the convexity of household preferences. His macroeconomic theorem stipulates that a given rise in taxes and social contributions intended to finance the increase of public goods and services increases the GNP and national income of a country by as much.
45. Insofar as the dominant economic theories have never validated the idea that the State limits and reduces working time, political decision makers, concerned with receiving the approval of economic experts, have always hesitated in acting on this duration, while it has always been opposed by employers.

5 The Normative Implications for Labour Policies

1. Unemployment such as Keynes envisaged, caused by pessimistic forecasts by economic agents such as sudden economic slumps and the oil crises of 1973/1974 and 1979/1980, can be assimilated to short-term unemployment, even if the unemployment's causes differ.

2. This proposal is based on the situation that existed in France in the years 1960–1965: effective working time exceeded the legal working time by 15% (cf. Ch. 4, §5.2).
3. It should be recalled that it is less the fact that growth is actually slow that raises a problem for employment than that the rate of consumption dynamics (and thus growth) falls below that of labour productivity (cf. Ch. 4, §4.2).
4. For the sake of brevity we have not mentioned retirement age, which is also a component of working time, thus of working life. Retirement age has fallen considerably over the last 30 to 40 years, whereas life expectancy and the quality of life have improved substantially. Insofar as the terms of the debate and its stakes have been clearly set out, we think that the consensus among workers is to opt more for shortening annual working time than the duration of working life (i.e. lowering retirement age), all other things being equal. Annual working time could be modulated during an individual's working life (e.g. by encouraging part-time work for the parents of infants or for persons at the end of their working life) and according to the difficulty of the profession concerned. This view stems from an empirical appreciation. Early retirement in France (between 50 and 60 years of age) has been much used by companies and the public authorities to contain unemployment, but in many cases this measure has been used against the will of the individuals concerned.
5. Nonetheless, if there is an area where a Keynesian type budget deficit can be pertinent, it is certainly here in support of this remedial policy.
6. A reduction of income inequalities (by taxation or by the modulated reduction of wages) would contribute to increasing society's propensity to consume (Ch. 4, §2.3.2).
7. The "education-employment evaluations", issued by the INSEE, the results of which are published in the review *Économie et statistique*, illustrate this downgrading process at work over a period of 30 years. Cf. *Économie et statistique*, 134, 193–194, 216, 277–278, 304–305, 354, 388–389, etc.
8. Some economists and politicians explain unemployment by the poor (or nonexistent) qualifications of part of the population. This prevents these workers from generating productivity equal to or better than the guaranteed minimum wage rate (SMIC). To our thinking, this mistakes a consequence for a cause; a farmer, after having purchased more fertiliser than he can optimally utilise on his farm, might as well complain that the price of fertiliser is higher than the value of his marginal product! When examining the history of education (Prost, A., *Histoire de l'enseignement en France, 1800–1967*, Colin, 1970), it can be seen that till very recently, for the great majority of employees, professional training was done exclusively on the job. However, this has not prevented the economy from undergoing radical technological changes since the dawn of the Industrial Revolution. Each time, companies and workers have known how to adapt to them. Take the qualifications of the labour force that underpinned the Post-War Boom: probably 80% of this force had not gone beyond primary school education and had strictly no initial vocational training when entering active life. (This counts few if any of the immigrant workers that spoke little or none of the language of the host country that companies recruited massively during this period.) The generations born after World War II systematically continued their education beyond primary school. And by fortuitous coincidence, around 1970, when the economy began its long crisis of slow growth,

these generations, which were on average better educated than their predecessors, entered professional life. Despite all the shortcomings of and criticism levelled at the education system (none of which are new!), the level of initial education has improved constantly over a long period, esp. since the 1960s, as proved by the INSEE data drawn from population and education-employment surveys. It is also difficult to see how current technological changes could make part of the population less productive than it has been in the past. It is the relative abundance of such unused labour in relation to the needs of the economy that led companies to become much more selective regarding qualifications during recruitment in the last 25 years of the 20th century, contrary to the previous 25 years. This trend continues at the beginning of the 21st century.

9. A version, participating in the same "conservative" theoretical interpretation of the labour market – that is, the minimum wage is too high in relation to the potential productivity of poorly qualified workers – but more "social" in its application, consists in lowering the charges on low wages without affecting the net wage received by workers. If we reason in terms of total labour cost (as we have mostly done till now by neglecting contributions paid by employees from wages), the analysis developed in ¶3.2. is fully applicable. However, if we reason in terms of net wage, the termination of social contributions on low wages (triangle L_eBE of Figure 5.1) will be necessarily offset by increased taxation or by increasing the social contributions taken from average and high wages (i.e. in rectangle OL_eEw_e of Figure 5.1).
10. Elasticity of |0.3| cited by Gazier, B., op. cit., 179–180.
11. Gadrey, J., Jany-Catrice, F., and Ribault, T., *France-Japon-Etats-Unis: L'emploi en détail*, PUF, Paris, 1999. Recall what was said previously (Ch. 1, §4.3, n. 64): in comparison to France, the full-time working week in the United States was comparable (and even lower) from 1870 to World War II, then lower until 1982 (esp. in the 1950s and 1960s) and finally higher from 1982 on. Income inequality was lower in the USA in the 1940s, 1950s and 1960s and then increased (esp. since 1980), whereas in France it evolved less significantly.
12. To obtain growth rich in jobs, jobs not linked to the exacerbation of income inequality or precariousness, major innovations in consumer goods are necessary, with fewer in the production process, in order for consumption to be more dynamic than labour productivity.
13. Given that the jobless are mostly poorly qualified, the effect of this type of policy is to encourage companies to train and promote (or requalify) workers in-house as a function of their learned or potential competences so as to save on paying overtime for skilled labour.

6 Is a Synthesis of Economic Theories Possible?

1. Smith, A., op. cit., vol. I, book IV, ch. II, 456. It should be emphasised, with Vergara, F., *Les fondements philosophiques du libéralisme*, La Découverte, Paris, 2003, 190, that if for Adam Smith, esp. in this constantly cited phrase there is "*in many cases*" convergence between individual interest and common interest, there is nothing systematic about it, contrary to what certain persons would have us think.

2. This specialisation is described in Ricardo's law of comparative advantages, which serves as the basis for free trade. In Ricardo's demonstration one can simply replace two countries, for example, England and Portugal, with two families living next to each other in the Neolithic period or exchange cloth and wine for craft and food products to reach the same conclusions on the advantage provided by specialisation and trade (with, moreover, greater strength than in the case of trade between countries).
3. Just as children at primary school use marbles as a kind of money to trade small objects in the playground, so too we can assume that adult *Homo sapiens* discovered the advantages of this type of trading very early on!
4. Markets for staple crops, the labour market, the production and exchange of money and the natural commodity of land. Cf. n. 1 of the General Introduction.
5. See the works of a general nature cited in the references.
6. Keynes, J. M., op. cit., 13.
7. Ibid., 330. Here Keynes alludes to the work of Jevons, *Commercial crises and sunspots* (1878–1879), in which one of the "fathers of marginalism" used agricultural production to illustrate the relative coincidence of the periodicity of sunspots and that of economic crises, the former being responsible for the latter. However, this idea has long since been rejected.
8. Ibid., 9–10; emphasis added.
9. The Marxian analysis of the equalisation of profit rates presupposes that the market for consumer goods (and middlemen) is perfectly competitive and that the mobility of factors of production is also perfect.
10. Examined under the most operational angle of marginalist reasoning, the distinction between relative and absolute value loses pertinence as the two phenomena are interdependent. Extending working time necessarily presupposes, from a static viewpoint, a matching reduction of the real wage rate (a relatively unrealistic possibility; cf. Ch. 3, §3.1) and, from a dynamic viewpoint, gains in productivity or an increase in productive capital.
11. On the contrary, I concur with the criticisms (cf. Abraham-Frois, G., *Économie politique*, Economica, Paris, 2001) made of Marx's premise on the downward trend of the rate of return – a premise many Marxists consider central to his thinking. From the dynamic viewpoint, the technological innovations contained in material production resources contribute to curbing the reduction of the marginal product of capital. Furthermore, so far this premise has been disproved over the long-run by the fact that in order for such a downward trend to occur, it would be necessary for innovations in goods and in the production process to dry up and, thus, for economic growth to slow down to the point of becoming stationary. But even so, the economy would not collapse.
12. Here the unsolved problem of transforming values into prices is finally solved ipso facto by treating it in a marginalist framework. Furthermore, it is awareness of the possibility of such a link between Marxian theory on value labour and microeconomic theory of prices and costs that convinced me to reason with the tools of neoclassical economics at the end of the 1980s and the beginning of the 1990s.
13. The fact that companies are self-managed does not guarantee that the rate of extortion by overwork – the rate of exploitation of workers (i.e. according

to Marxian terminology, the difference between the total volume of work supplied and the share attributed to them in the form of wages, carried over to this total) – is minimised over the long-run. Workers who manage their companies might well initiate a deliberate policy of investment – considered in their eyes virtuous – that could turn out to be excessive and inefficient. The cases of different countries governed by socialist regimes in the 20th century show that the rate of investment in comparison to GNP (an indicator analogous to the rate of extortion by overwork) reached astounding figures, without parallel with those observed in capitalist countries, resulting in very poor levels of consumption and, all said and done, in an incredible waste of productive resources. Workers worked hard (rather they were obliged to since their choice in this case was hardly self-managed!) to build socialism, though finally their efforts came to nothing.

14. However, this happened only when the dominant social classes hung on to their power despite their loss of legitimacy.
15. From 1842/1843, Marx started to display his communist conviction in articles of the *Rheinische Zeitung*, convictions from which he would never stray. On the contrary, the *Manuscripts of 1844*, which consist of lecture notes of the best-known economists of the time and in an initial analytical draft (not published in his lifetime), indeed date from this year, and the most in-depth analyses, such as *A contribution to the critique of political economy* and *Capital* (vol. I), were not published until 1859 and 1867, respectively.
16. In this instance, using the same term, *capitalism*, to describe (and denounce) the reality of a mode of production both in the 19th century, when labour law was non-existent, and at the beginning of the 21st century is cursory and misleading. Obviously, capitalism was characterised at the outset by the separation of those who owned and controlled production resources and those whose labour operated them. However, it is quite possible to consider an economy where this antagonism (a term used by Marx) would be formally resolved, for example, if the companies' capital was owned in the main by pension (or savings) funds belonging to employees. However, the adjective *capitalist* remains appropriate if the power to distribute added value and labour demand is held predominantly by the funds' managers, however friendly the society. But it is inappropriate if labour law and its application are such that this power belongs to and is mostly exercised to benefit the workers. Logically, one should speak of a labour or mixed (capitalist-labour) economy if this power is shared.
17. "Man proposes, God disposes."

7 General Conclusion

1. Quoted from a conclusion written by Perrot, A., op. cit., 120.
2. Keynes, J. M., op. cit., 13.
3. Smith, A., op. cit., vol. I, ch. VIII, 84.
4. Such an excessive wage rate (higher than the long-term equilibrium rate on the market) would necessarily imply generalised losses for all companies. This is conceivable in the short term but not in the long term. Otherwise, every company would go bankrupt and disappear! Long-term involuntary

unemployment is therefore inexplicable if viewed from the logic of this basic neoclassical model. Cf. Ch. 3, §2.3.

5. It should be recalled that the same real innovation can have applications in both production and consumption, but the respective effects need not be of the same magnitude.
6. Deadlocks can certainly exist for the supply-side when the freedom of enterprise is bridled by legal constraints (e.g. in former communist countries) or because the rule of law is not firmly established or not respected (organised crime, rackets, social and political instability, etc.) or when production factors are very scarce (especially if qualified labour is very scarce or entrepreneurial culture is lacking). However, these hurdles hardly concern developed countries at present.

References

The aim of this research was to understand why the labour market has been as historically conflictual as it has, with recurrent claims being made for more wages and shorter working time over the last two centuries. Also, why legislators in every democratic country have recognised the right of employees to form coalitions – or in other words monopolies – on this market and then establish labour laws by beginning with the limitation of working time. This led me to take the very real and recurrent claims made by the labour movements representing employees seriously and thus try to understand the reasons. I focused on demonstrating that it was possible to explain this history to a great extent through economic analysis, by introducing two hypotheses in the basic corpus of neoclassical theory.

Therefore regarding the references, it was above all necessary (1) to establish facts historically; (2) to verify whether or not my two hypotheses had already been developed and, if this were the case, in what way. This therefore required investigations in four vast domains: economic and social history, political economics (or economic analysis) and its history, theories of the labour market and theories of economic growth. For all these domains, I limited my references to mostly synthetic works. Given the highly trenchant nature of my two hypotheses and their very far-reaching implications, it was not necessary to cite the many articles I consulted. They were based on hypotheses (with their microeconomic constructions) that differed from mine. Lastly, for reasons of accessibility and convenience, most of the references are in French.

Economic and social history

Aguet, J.-P., *Contribution à l'histoire du Mouvement ouvrier français: Les grèves sous la Monarchie de Juillet (1830–1847)*, PhD thesis, Lausanne University, Librairie E. Droz, 1954.

Andreani, E., *Grèves et fluctuations, la France de 1890 à 1914*, Cujas, Paris, 1968.

Asselain, J.-C., *Histoire économique: De la révolution industrielle à la première guerre mondiale*, Presses de la FNSP and Dalloz, Paris, 1985.

——, *Histoire économique du XXe siècle. La réouverture des économies nationales (1939 aux années 1980)*, Presses de Sciences Po and Dalloz, Paris, 1995.

Aubin, G., and Bouveresse, J., *Introduction historique au droit du travail*, PUF, Paris, 1995.

Bodiguel, J.-L., *La réduction du temps de travail: Un enjeu de la lutte sociale*, Les éditions ouvrières, Paris, 1968.
Bouvier, J. (supervisor), *La France en mouvement: 1934–1938*, Champ Vallon, Seyssel, 1986.
Braudel, F., and Labrousse, E. (supervisor), *Histoire économique et sociale de la France*, vols 3–4, PUF, Paris, 1976, 1979, 1980.
Castel, R., *Les métamorphoses de la question sociale*, Gallimard, Paris, 1999.
Coornaert, E., *Les corporations en France avant 1789*, Gallimard, Paris, 1941.
Cross, G., *A Quest for Time. the Reduction of Work in Britain and France, 1840–1940*, University of California Press, Berkeley, 1989.
De Vries, J., *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present*, Cambridge University Press, Cambridge, 2008.
Dolléans, E., *Histoire du mouvement ouvrier*, 3 vols, Armand Colin, Paris, 1936, 1939, 1953. New edn, 1967.
Dommanget, M., *Histoire du Premier Mai*, Société universitaire d'édition et de librairie, Paris, 1953.
Fridenson, P., and Reynaud, B. (supervisor), *La France et le temps de travail (1814–2004)*, Odile Jacob, Paris, 2004.
Gide, C., *L'émancipation: Contributions à la Revue d'économie politique*, vols 3, 5, Collection "Les œuvres de Charles Gide", L'Harmattan, Paris, 2001, 2003.
Guedj, F., and Vindt, G., *Le temps de travail: Une histoire conflictuelle*, Syros, Paris, 1997.
Hirigoyen, M.-F., *Le harcèlement moral: La violence perverse au quotidien*, Syros, Paris, 1998.
Kaplan, S. L., *La fin des corporations*, Fayard, Paris, 2001.
Kergoat, J., Boutet, J., Jacot, H. and Linhart, D. (supervisor), *Le monde du travail*, La Découverte, Paris, 1998.
Le Crom, J.-P. (supervisor), *Deux siècles de droit du travail: L'histoire par les lois*, Éditions de l'Atelier, Paris, 1998.
Le Goff, J., *Droit du travail et société*. vol. 1: *Les relations individuelles de travail*, vol. 2: *Les relations collectives de travail*, Presses universitaires de Rennes, Rennes, 2001, 2002.
——, *Du silence à la parole: Une histoire du droit du travail des années 1830 à nos jours*, Presses universitaires de Rennes, Rennes, 2004.
Levasseur, E., *Histoire des classes ouvrières et de l'industrie en France avant 1789*, 2 vols, Arthur Rousseau, Paris, 1900, 1901.
Levasseur, E., *Questions ouvrières et industrielles en France sous la Troisième République*, Arthur Rousseau, Paris, 1907.
Lyon-Caen, G., Pelissier, J., and Supiot, A., *Droit du travail*, 19th edn, Dalloz, Paris, 1998.
Marchand, O., and Thelot, C., *Le travail en France (1800–2000)*, Nathan, Paris, 1997.
Martin Saint-Léon, E., *Histoire des corporations de métiers, depuis leur origine jusqu'à leur suppression en 1791, suivie d'une étude sur l'évolution de l'idée corporative au XIXe siècle et sur les syndicats professionnels*, 3rd edn, Alcan, Paris, 1922.
Méda, D., *Le travail: Une valeur en voie de disparition*, Aubier, Paris, 1995.
Parias, L.-H. (supervisor), *Histoire générale du travail*, vol. 3 (supervised by Fohlen, C., and Bedarida F.) and vol. 4 (supervised by Touraine A.), Nouvelle Librairie de France, Paris, 1963.

Pelissier, J., Auzero, G., and Dockès E., *Droit du travail*, 26th edn, Dalloz, Paris, 2011.
Perrot, M., *Les ouvriers en grève: France 1871–1890*, 2 vols, Mouton, Paris, 1973.
Polanyi, K., *Essais* (texts collected and presented), Le Seuil, Paris, 2008.
——, *The Great Transformation*, 2nd edn (2001), Beacon Press, Boston, 1944.
Prélot, M., and Lescuyer, G., *Histoire des idées politiques*, 13th edn, Dalloz, Paris, 1997.
Prost, A., *Histoire de l'enseignement en France, 1800–1967*, Armand Colin, Paris, 1970.
Rae, J., *Eight Hours for Work*, London, 1894.
Reynaud, J.-D., *Les syndicats en France*, 2 vols, Le Seuil, Paris, 1975.
Rist, C., *Réglementation légale de la journée de travail de l'ouvrier adulte en France,* PhD thesis, University of Paris, L. Larose, 1898.
Rivero, J., and Savatier, J., *Droit du travail*, PUF, Paris, 1993.
Roche, D., *Histoire des choses banales. Naissance de la consommation. XVIIe–XIXe siècle*, Fayard, Paris, 1997.
Rouilleault, H., *Réduction du temps de travail: Les enseignements de l'observation*, La documentation française, Paris, 2001.
Sauvy, A., *Histoire économique de la France entre les deux guerres*, vol. 2, Fayard, Paris, 1967.
Taft, P. and Ross, P., "American labor violence", in Graham, H. D., and Gurr, T. R. (supervisor), *The history of violence in America*, Bantam, New York, 1969.
Thompson, E. P., *The Making of the English Working Class*, Victor Gollancz, London, 1980.
Vergara, F., *Les fondements philosophiques du libéralisme*, La Découverte, Paris, 2002.
Villermé, L.-R., *Tableau de l'état physique et moral des ouvriers employés dans les manufactures de coton, de laine et de soie*, vol. 2, Renouard, Paris, 1840.

Political and historical economics of economic thinking

Abraham-Frois, G., *Économie politique*, 7th edn, Economica, Paris, 2001.
Baslé, M., Benhamou, F., Chavance, B., Gélédan, A., Léobal, J., and Lipietz, A., *Histoire des pensées économiques*, vol. 1: *Les fondateurs*, 2nd edn, vol. 2: *Les contemporains*, Sirey, Paris, 1993.
Begg, D., Fischer, S., and Dornbusch, R., *Economics,* 9th edn, McGraw-Hill, London, 2008.
Blaug, M., *Economic theory in retrospect*, 5th edn, Cambridge University Press, Cambridge, 1997.
Clerc, D., *Les grands auteurs de l'économie et de la sociologie*, 2 vols, Syros / La Découverte, Paris, 1997, 2000.
Gould, J. P., and Ferguson, C. E., *Microeconomic theory*, 5th edn, R. D. Irwin, Homewood, IL, 1980.
Guerrien, B., and Benicourt, E., *La théorie économique néoclassique: Microéconomie, Macroéconomie et théorie des jeux*, 3rd edn, La Découverte, Paris, 2008.
Jessua, C., *Histoire de la théorie économique*, PUF, Paris, 1991.
Keynes, J. M., *The General Theory of Employment, Interest and Money*, Macmillan / Saint Martin's Press, London, 1936. New edn, 1970.

Mankiw, N. G., *Principes de l'économie*, 2nd edn, De Boeck Université, Brussels, 2011.
——, *Principles of microeconomics; Principles of macroeconomics*, 6th edn, vol. 2, South-Western Cengage Learning, Mason, OH, 2012.
Marx, K., *Le capital*, book I, 3 vols, Éditions sociales (Translation by Joseph Roy, extensively revised by the author in 1875), Paris, 1867.
Phelps, E. S., *Économie politique*, Fayard, Paris, 2006.
Picard, P., *Éléments de microéconomie, théorie et applications*, 8th edn, Montchrestien, Paris, 2011.
Samuelson, P. A., *Economics*, 11th edn, McGraw-Hill, New York, 1980. And subsequent editions with Nordhaus, W.
Say, J.-B., *Traité d'économie politique*, Calmann-Levy, Paris, 1803. New edn, 1982.
Smith, A., *An Inquiry into the Nature and Causes of the Wealth of Nation*, 2 vols, Clarendon Press, Oxford, 1776. New edn, 1976.
Stiglitz, J. E., *Principes d'économie moderne*, 3rd edn, De Boeck Université, Brussels, 2007.
Varian, H. R., *Introduction à la microéconomie*, 7th edn, De Boeck Université, Brussels, 2011.
Vercherand, J., "Analyse économique du syndicalisme agricole. Une typologie comparative à partir des défaillances de marché", in *Economie rurale*, Paris, no. 312, July–August 2009.
——, *Économie politique. Une articulation entre la théorie néoclassique, Marx, Keynes et Schumpeter*, Presses universitaires de Rennes, Rennes, 2004.

Economics of labour

Aznar, O., *Travailler moins pour travailler tous*, Syros, Paris, 1993.
Becker, G. S., "A theory of the allocation of time", *Economic Journal*, vol. 75, September 1965.
Borjas, G. D., *Labor Economics*, 4th edn, McGraw-Hill, Boston, 2008.
Boulin, J.-Y., Cette, G., Taddei, D. et al., special issue "Temps de travail", *Futuribles*, Paris, nos. 165–166, May–June 1992.
Cahuc, P., and Zylberberg, A., *Labor Economics*, MIT Press, Cambridge, MA, 2004.
——, *Économie du travail*, Dalloz, Paris, 1989.
Cette, G., and Taddei, D., *Temps de travail: Modes d'emplois*, La Découverte, Paris, 1994.
Dunlop, J. T., *Wage determination under trade unions*, A.-M. Kelley, New York, 1944. Rep. 1966.
Ehrenberg, R., and Smith, R. S., *Modern Labor Economics*, 9th edn, Addison Wesley, Boston, 2006.
Freyssinet, J., *Le chômage*, La Découverte, Paris, 1998.
Gadrey, J., Jany-Catrice, F., and Ribault, T., *France-Japon-Etats-Unis: L'emploi en détail*, PUF, Paris, 1999.
Gambier, D., and Vernieres, M., *Le marché du travail*, Economica, Paris, 1991.
Gazier, B., *Économie du travail et de l'emploi*, 2nd edn, Dalloz, Paris, 1992.
Guillemin, H., and Moule, M., *Le marché du travail*, Eyrolles, Paris, 1993.
INSEE, "La réduction du temps de travail", *Économie et Statistique*, Paris, nos. 376–377, 2004.

Leclercq, E., *Les théories du marché du travail*, Le Seuil, Paris, 1999.
Perrot, A., *Les nouvelles théories du marché du travail*, La Découverte, Paris, 1995.
Redor, D., *Économie du travail et de l'emploi*, Montchrestien, Paris, 1999.
Rigaudiat, J., *Réduire le temps de travail*, Syros, Paris, 1993.
Smith, S., *Labour economics*, 2nd edn, Routledge, London, 2003.
Tchibozo, G., *Économie du travail*, Dunod, Paris, 1998.
Thaize-Challier, M.-C., *Les modèles théoriques d'offre de travail*, Economica, Paris, 1997.
Tremblay, D.-G., *Économie du travail: Les réalités et les approches théoriques*, 4th edn, Éditions Saint-Martin / Télé-Université, Montréal, 2004.

Economics of growth

Abraham-Frois, G., *Dynamique économique*, 9th edn, Dalloz, Paris, 2002.
Acemoglu, D., *Introduction to modern economic growth*, Princeton University Press, Princeton, NJ, 2009.
Arrous, J., *Les théories de la croissance*, Le Seuil, Paris, 1999.
Barro, R. J., and Sala-I-Martin, X., *Economic growth*, 2nd edn, MIT Press, Cambridge, MA, 2004.
Berthomieu, C., "La loi et les travaux d'engel", in *Consommation, annales du CREDOC*, Paris, no. 4, 1966.
Bosserelle, E., *Le cycle Kondratieff: Théories et controverses*, Masson, Paris, 1994.
——, *Dynamique économique*, 2nd edn, Gualino Lextenso Éditions, Paris, 2010.
Fitoussi, J.-P., and Sigogne, P., *Les cycles économiques*, 2 vols, Presses de la FNSP, Paris, 1994.
Gilles, P., *Histoire des crises et des cycles économiques; Des crises industrielles du 19e siècle aux crises financières actuelles,* 2nd edn, Armand Colin, Paris, 2009.
Guellec, D., and Ralle, P., *Les nouvelles théories de la croissance*, 5th edn, La Découverte, Paris, 2003.
Helpman, E., *The mystery of economic growth*, Belknap Press, Cambridge, MA, 2004.
Herpin, N., and Verger, D., *Consommation et modes de vie en France: Une approche économique et sociologique sur un demi siècle,* La Découverte, Paris, 2008.
Kuznets, S., *National Product Since 1869*, Arno Press, New York, 1946. New edn, 1975.
Rosier, B., *Les théories des crises économiques*, 5th edn, La Découverte, Paris, 2003.
Schumpeter, J. A., *Business cycles*, 2 vols, McGraw-Hill, New-York, 1939.
——, *Théorie du développement économique*, Dalloz, Paris, 1912. New edn, 1999.