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An international comparison of minimum wages and labour market outcomes

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List of abbreviations

AW	Average wage
CPI	Consumer price index
EU	European Union
FLSA	Fair Labor Standards Act
Fair Work Act	<i>Fair Work Act 2009 (Cth)</i>
GDP	Gross domestic product
HMRC	Her Majesty's Revenue and Customs
ILO	International Labour Organization
LPC	Low Pay Commission
MBIE	Ministry of Business, Innovation and Employment
Minimum Wage Act	<i>Minimum Wage Act 1983 (NZ)</i>
MW	Minimum wage
NCCA	National Committee on Collective Agreements
NMW	National Minimum Wage
NMW Act	<i>National Minimum Wage Act 1998 (UK)</i>
OECD	Organisation for Economic Co-operation and Development
Panel	Expert Panel of the Fair Work Commission
PPP	Purchasing power parities
SMIC	Salaire minimum interprofessionnel de croissance
UK	United Kingdom
US	United States

Executive summary

This research is based on international comparisons of minimum wages and was undertaken on behalf of the Fair Work Commission with the purpose of informing the Annual Wage Review of 2015–16. In particular, it seeks to examine labour market outcomes for countries similar to Australia in terms of economic development and institutional arrangements, while recognising that low wages may be influenced just as much by collective bargaining as by statutory minimum wages.

Six countries are compared over the period 2003 to 2014. Three of them—Australia, France and New Zealand—have high minimum wages relative to the OECD average and three of them—the UK, Canada and the US—low minimum wages measured on the same relative basis. These are high GDP, OECD countries with reliable national statistics to allow for the necessary OECD data development and equivalisation.

Several labour market outcomes are compared accompanied by more general macroeconomic outcomes. These include short and long-term unemployment, employment to population ratios, transitions between minimum wage jobs and unemployment, the minimum wage bite, average wages and the earnings distribution, as well as GDP, labour productivity and taxation. Identification of causal links (whether in terms of what influences the level of the minimum wage, or in terms of what the causal outcomes of adopting specific levels of minimum wages—absolute or relative) is not, however, within the scope of this research. The research also notes the difficulties of estimating the precise number of minimum wage recipients.

The basis of the current system in Australia is the *Fair Work Act 2009* (Cth), which details a number of economic, social and other considerations that the Expert panel for annual wage reviews (Panel) must take into account when setting the national minimum wage or minimum rates of pay in modern awards. During each annual wage review, the Panel receives submissions and evidence from and holds public hearings with stakeholders. Any adjustment to the national minimum wage or minimum rates of pay in modern awards come into effect in July of each year. According to the Australian Bureau of Statistics' Survey of Employee Earnings and Hours for 2014 it was estimated that 18.8 per cent of employees had their pay set at exactly the rate specified in a modern award. In 2014 the Australian Government estimated that 1.6 per cent of employees were paid at the rate of the national minimum wage. The research notes that there are other higher estimates in the Australian literature.

In New Zealand, the minimum wage is reviewed by the Minister of Labour under the terms of the *Minimum Wage Act 1983* (NZ) each year and a recommendation is made to the Governor-General on the making of an Order in Council before the end of the calendar year. Any minimum wage adjustment has historically been put into effect by April of the following year. The New Zealand legislation does not specify the matters the Minister for Labour must take into account in making a recommendation or whether consultation with stakeholders is required, however, as a matter of practice, peak industry and employee bodies have been consulted and a set of published economic criteria have been used. According to one estimate, nearly six per cent of the workforce is paid at or below the minimum wage.

In France, the minimum wage is adjusted either automatically or by the French Government according to the methods prescribed by the French Labour Code, principally on the basis of yearly changes in the consumer price index (CPI) and other economic criteria. The minimum wage may be adjusted automatically if CPI increases by at least two per cent, otherwise, the French

Government adjusts the minimum wage on 1 January of each year. In addition to the economic criteria prescribed by the French Labour Code, the French Government may also award a discretionary increase to the minimum wage when conducting its adjustment. According to one estimate, over twelve per cent of all private sector workers earn the minimum wage and over twenty-eight per cent of private sector part-time workers.

In the United Kingdom (UK), the process for setting minimum wages is governed by the *National Minimum Wage Act 1998 (UK)*. The Secretary of State administering the legislation may adjust the national minimum wage from time to time. To date, the Secretary of State has referred matters arising under NMW Act to the Low Pay Commission (LPC) annually seeking a recommendation and report. The recommendations and report of the LPC are based on the terms of the referral by the Secretary of State and submissions and oral evidence received by the LPC and commissioned external research projects. Adjustments to the minimum wage come into effect in October of each year. According to the LPC, it was estimated that in 2015 about 5.3 per cent of workers were paid at the level of the minimum wage.

In the United States (US), a federal minimum wage was introduced under the *Fair Labor Standards Act 1938 (US)* and is administered by the Department of Labor. However, there is a network of State and local (city) statutes covering most, but not all, of the US labour market which may set a different, or no, minimum wage for that jurisdiction, with differing exemptions and methods for setting those minimum wages. The federal minimum wage is changed only infrequently and may only be done through a vote in Congress. The most recent increase in the federal minimum wage occurred in 2007 with the passage of the *Fair Minimum Wage Act 2007 (US)*, which adjusted the minimum wage in three stages. The US Bureau of Labor Statistics has estimated that in 2014 3.9 per cent of all hourly paid workers are employed at or below the federal minimum wage rate.

In Canada, the ten provinces (and three territories) set their own minimum rates, but not on the same basis and with different types of exemptions and differing levels of employees being paid on the minima. In the federal jurisdiction, the minimum wage is tied to the minimum wages paid in each province or territory. Statistics Canada has estimated that 6.7 per cent of employees (weighted by employment across provinces) were paid at the minimum wage in 2013.

International comparisons of minimum wage rates are rarely straightforward. The report uses hourly wages to allow the comparable inclusion of full-time and part-time employment pay. Levels of the minimum wage may be compared either adjusting for exchange rates or in terms of purchasing power parities (PPPs). The report also considers the bite, that is, the ratio of the minimum wage divided by the median wage.

In terms of purchasing power parities, France has the highest minimum wage, with Australia a close second and the US the lowest of the six countries being compared. In terms of the minimum wage bite, New Zealand comes second to France, with Australia third.

The report considers any spill-over effects from the lowest segment of the wage distribution (which includes the minimum wage) to the higher segments, in the sense that those paid above the minima have the increase in minimum wages passed on to them. There is evidence of this occurring in France, the US and the UK. Understanding spill-over effects is highly complex and the report recognises that this complexity is amplified in Australia due to the awards system.

The report examines the prevalence of labour market transitions of employees on the minimum wage, asking whether these may differ from the transitions of higher paid employees. It finds some

evidence that those on minimum wages may fare better than those not in employment in transitioning into better paid jobs.

The research also considers tax and benefit rates on employees and employers which may influence the extent to which employees benefit from a particular minimum wage rate and the extent to which this imposes costs on the employer. Taxes appear to have a bigger impact in France than elsewhere.

Australia enjoyed the fastest rate of economic growth over the period 2003 to 2014 with New Zealand and Canada next in line and France having the slowest growth rate. However, in terms of labour productivity, the US was slightly ahead of Australia, followed by Canada.

France stands out in having higher short-term and long-term unemployment rates than the other five comparator countries, and these rates have been increasing over time. Youth unemployment rates in France are also much higher than elsewhere. Australia fares much better in all these aspects. A similar pattern applies to employment-to-population ratios, with New Zealand, Australia and Canada having the highest ratios and France the lowest.

It is only in terms of an equitable income distribution that the story differs. France has the most equal income distribution and the US the most unequal, whether measured in terms of Gini coefficients or income decile ratios, both becoming less equal over time.

The research examines several specific groups of employees defined in terms of their propensity to be at the bottom of the income distribution. These include young workers, who, however, may be protected by the special provisions applying to them, migrants, who may be employed at below minimum wage rates, despite the fact that this is unlawful, and part-time employees who in some cases may prefer longer hours than those available to them, but cannot find them. In general, women are disproportionately found among minimum wage employees, but statistics on their precise numbers are not always readily available.

The main conclusion of this research is that there are no clear patterns to be traced when comparing the associations of the chosen labour market outcomes between the three high minimum wage countries (France, Australia and New Zealand) and the three low minimum wage ones (UK, US and Canada). France and Australia who have the highest minimum wages, also have the worst and the best labour market outcomes respectively. The UK, US and Canada present better labour market outcomes than France, but not than Australia or New Zealand. Australia and France started with a similar high equity record in 2003, but diverged in the following years, with Australia dropping considerably, whilst still remaining more equal than the UK, US and Canada.

1 Introduction

This research report is undertaken for the Fair Work Commission on an international comparison of minimum wages and labour market outcomes with the purpose of informing the Annual Wage Review 2015–16. In particular, it seeks to examine labour market outcomes for countries similar to Australia with relatively high minimum wages and similar countries with relatively low minimum wages and to consider the characteristics of the labour market institutions within these countries. In identifying these countries, attention is paid to the levels of economic development, degree of centralised wage fixation and definitions of relatively high and low minimum wages. Its importance lies in the potential different labour market outcomes for countries with relatively high minimum wages and relatively low minimum wages. To this end, we consider unemployment and unemployment rates, employment to population ratios, labour market transitions between minimum wage jobs and unemployment, minimum wage bites, average wages and the earnings distribution and macroeconomic indicators such as gross domestic product (GDP) and labour productivity. Identification of causal links is not within the scope of this research.

The Organisation for Economic Co-operation and Development (OECD) reported in 2015 that 26 out of 34 member countries now had minimum wages in place and their incidence was increasing. Since 1990, nine countries (notably including Germany) had introduced their own national minimum wage, whether as a reflection of declining union influence, diminished collective bargaining coverage or for other reasons. We must remember that minimum wages do not exist in isolation but in many cases sit alongside collectively bargained wage floors. However, they can sometimes substitute for these when collective bargaining coverage is low. In the eight OECD countries without a national minimum wage, which include the Nordic countries, Austria, Switzerland and Italy, a high percentage of the workforce is covered by sector-level collective agreements. Further, Bosch (2015) shows that in five European Union (EU) countries, including France and the United Kingdom (UK) over the period 2008 to 2010, a high rate of collective bargaining coverage is associated with a much lower share of low wage workers than is the case for minimum wages. Extending the analysis to 18 European countries over the period 2007 to 2009, Garnero, Kampelman and Rycx (2015a) analyse no less than 1100 sectoral agreements across countries, confirming that these are functionally the equivalent of national statutory minima in terms of reducing overall and inter-industry earnings inequalities. However, higher collective bargaining coverage is required to ensure that a smaller fraction of workers is paid below prevailing minima. This can reduce the trade-off between high wage floors and non-compliance/non-coverage (Garnero, Kampelmann and Rycx, 2015b). This seems to support the case for a degree of national autonomy and institutional diversity. Despite this evidence there have been repeated calls for the introduction of an EU wide minimum wage. (For a fuller discussion see Garnero et al., 2015b and 2015). Given our remit we do not pursue this issue further here.

In what follows we provide a detailed analysis of six selected OECD member countries, three of them representative of 'high' minimum wage countries (Australia, France and New Zealand) and three of them representative of 'low' minimum wage countries (the United States (US), Canada and the UK). In defining high and low we compare levels of minimum wages across OECD countries and the relative bite of the minimum wage within each country. Those countries selected are all countries which have relatively high GDP among OECD member states. Australia, New Zealand and the UK have historical links which have influenced their industrial relations systems. Canada also has historical links with the UK, but has also been influenced by its close neighbour, the US. In the latter there has been a keen debate about the merits or otherwise of minimum wage legislation.

France is of interest because its minimum wage has been set at a relatively high level and the adjustment mechanism is different from elsewhere. We consider the period from 2003 to 2014 as this includes the global financial crisis and while the understanding of the causal influences surrounding the minimum wage is not the remit of this report, the interpretation of the labour market outcomes that we examine will have without doubt been influenced by the financial crisis. Since the financial crisis has touched on the different countries we examine in different ways, it is appropriate that we carry out our comparisons through a lens that acknowledges the differential effect of the financial crisis on each of the economies under investigation. It is important that we understand the various questions that arise in this context. For example, we may wish to ask to what extent did those responsible for setting the minimum wage moderate the rate of increase in the minimum wage due to the financial crisis. What were the precise labour market impacts of the crisis and the ensuing recession and how would they have interacted with all labour market and more general economic indicators we employ in this report? These are among the questions that ideally one would wish to address, but they are perhaps too difficult to disentangle and answer in relation to the indicators chosen for analysis here and have therefore stayed outside the remit of this report.¹

¹ An important question arises when we look at the minimum wage setting through the lens afforded to us by the financial crises in different countries. To what extent may we use the financial crisis as an exogenous shock in order to model the workings of the minimum wage in relation to the labour market outcomes? The report notes these thoughts about fruitful future research opportunities based on the data generated by the financial crisis, but does not examine them as they go well beyond its remit.

2 Overview of labour market institutions

In this section we highlight the fact that the level of the minimum wage, the bodies responsible for determining and implementing it, the criteria and chosen method of implementation, the number of exceptions or exclusions from the minimum, the frequency of adjustment and the means of enforcement all vary across countries. Further, the legislation itself may change over the period of analysis.

A summary of the operating legislative framework adopted in each country follows.

2.1 Australia

The regulatory framework for setting minimum wages in Australia has changed several times over the period of investigation. From 1996 to 2006, minimum wages were set within both state and federal workplace relations systems, the latter regulated by the *Workplace Relations Act 1996* (Cth). Federal minimum wages were contained in awards which were enforceable instruments covering all or part of an industry or occupation. Wages in federal awards could be varied on application to the Australian Industrial Relations Commission (AIRC) by a party to an award. Generally these applications were heard through periodic national wage cases.² Awards also contained schedules for sub-minimum wages for junior employees, employees with disability and apprentices.

In 2006, the *Workplace Relations Act 1996* (Cth) was amended to expand the coverage of the federal workplace relations system and introduce a new minimum wage-setting process.³ The Australian Fair Pay Commission (AFPC) replaced the AIRC as the national wage-setting body and wage fixing no longer occurred through adjustments to awards. Minimum wages for national system employees were set and adjusted in separate instruments called Australian Pay and Classification Scales, which covered employees in an industry or occupation. A federal minimum wage and special wages for trainees and apprentices, juniors and employees with disability were also introduced during this time.

The current process for adjusting minimum wages is regulated by the *Fair Work Act 2009* (Fair Work Act). The Fair Work Act provides for annual wage reviews to be conducted by an Expert Panel (Panel) of the Fair Work Commission (Commission). The Panel is constituted of the Commission's President, three other full-time members of the Commission and three part-time members who are appointed for their knowledge or experience of workplace relations, economics, social policy or business, industry or commerce.⁴

The Fair Work Act requires the Panel to conduct and complete a review of the national minimum wage and of minimum wages in modern awards.⁵ Within this system, modern awards are enforceable instruments which cover a whole industry or occupation to provide a safety net of minimum pay rates and employment conditions in addition to any legislated conditions contained in

² Creighton B and Stewart A (2010), *Labour Law*, 5th edition, The Federation Press, p. 13.07.

³ *Workplace Relations (Work Choices) Amendment Act 2005* (Cth).

⁴ Fair Work Act, s. 620.

⁵ Fair Work Act, s. 285

the Fair Work Act's National Employment Standard provisions. The annual wage review directly affects employees in the national system who are:

- covered by a modern award or a transitional instrument;
- award and agreement free employees; or
- covered by special national minimum wages for junior employees, employees to whom training arrangements apply and employees with disability.⁶

The Fair Work Act sets out procedural fairness requirements for the annual wage review. The Panel must ensure that all persons and bodies are given a reasonable opportunity to make and reply to written submissions and submissions must be published (unless the submission contains information that is confidential or commercially sensitive).⁷

In conducting the annual wage review, the Panel must consider both the “minimum wages objective” (s.284) and the “modern awards objective” (s.134) setting out what must be taken into account by the Commission when setting the national minimum wage and when setting, varying or revoking modern award minimum wages. The minimum wages objective states that the Commission must:

...establish and maintain a safety net of fair minimum wages, taking into account:

- (a) the performance and competitiveness of the national economy, including productivity, business competitiveness and viability, inflation and employment growth; and
- (b) promoting social inclusion through increased workforce participation; and
- (c) relative living standards and the needs of the low paid; and
- (d) the principle of equal remuneration for work of equal or comparable value; and
- (e) providing a comprehensive range of fair minimum wages to junior employees, employees to whom training arrangements apply and employees with a disability.⁸

The process involves:

- written submissions from interested organisations and individuals;
- consultations before the Panel;
- research commissioned by the Panel; and
- issuing a substantial written decision which provides reasons for increasing or not increasing minimum wages (since 2009 there have only been annual increases).

The modern awards objective provides:

The FWC must ensure that modern awards, together with the National Employment Standards, provide a fair and relevant minimum safety net of terms and conditions, taking into account:

⁶ Fair Work Act, s. 294.

⁷ Fair Work Act, s. 289.

⁸ Fair Work Act, s. 284.

- (a) relative living standards and the needs of the low paid; and
- (b) the need to encourage collective bargaining; and
- (c) the need to promote social inclusion through increased workforce participation; and
- (d) the need to promote flexible modern work practices and the efficient and productive performance of work; and
- (da) the need to provide additional remuneration for:
 - (i) employees working overtime; or
 - (ii) employees working unsocial, irregular or unpredictable hours; or
 - (iii) employees working on weekends or public holidays; or
 - (iv) employees working shifts; and
- (e) the principle of equal remuneration for work of equal or comparable value; and
- (f) the likely impact of any exercise of modern award powers on business, including on productivity, employment costs and the regulatory burden; and
- (g) the need to ensure a simple, easy to understand, stable and sustainable modern award system for Australia that avoids unnecessary overlap of modern awards; and
- (h) the likely impact of any exercise of modern award powers on employment growth, inflation and the sustainability, performance and competitiveness of the national economy.⁹

The Review is generally conducted in the second half of the Australian financial year, commencing in March and concluding in June.

Following the annual wage review, the Panel is required to make a national minimum wage order (Order). Changes are expressed as a percentage of the previous year's wage and the wage rate itself is expressed as an hourly rate and weekly rate for the national minimum wage. Award wages are subsequently adjusted (and also expressed as hourly rates).¹⁰

Wages for employees covered by special national minimum wages for junior employees, employees to whom training arrangements apply and employees with disability are provided for as a percentage of the adult national minimum wage or as a percentage of an applicable award rate as expressed in the Order. The Order also provides for the rate of casual loading.

To date, the Panel has ordinarily issued a draft order for comment by the parties, with the final Order required to come into effect by 1 July of each year.

The Australian Bureau of Statistics' Survey of Employee Earnings and Hours (EEH) for 2014 estimated that 18.8 per cent of employees had their pay set at exactly the rate specified in the award. In its submission to the Annual Wage Review 2014–15, the Australian Government estimated that 150 000 employees, or 1.6 per cent, were paid the national minimum wage based

⁹ Fair Work Act, s. 134.

¹⁰ See for example, Order of the Annual Wage Review 2014–15 PR568825.

on data from the EEH for 2014.¹¹ Other research has produced higher estimates, e.g. Healy and Richardson (2006) and McGuinness, Freebairn and Mavromaras (2007). We note the difficulties of estimating the precise number of minimum wage recipients, as explained by Bound et al. (2001) and several references therein.

Underpayment of minimum wages can be investigated by the Fair Work Ombudsman¹² who has the power to issue compliance notices, enforceable undertakings or prosecute an employer in the Federal Courts for non-payment or underpayment of minimum wages. Penalties for non-payment or underpayment of wages can be imposed by the Federal Court and Federal Magistrates' Court.

2.2 New Zealand

Minimum wages in New Zealand are regulated by the *Minimum Wage Act 1983 (NZ)* (Minimum Wage Act) which provides that each calendar year the Minister of Labour is to review minimum rates for adults, juniors and trainees.¹³ Following the review, the Minister of Labour makes a recommendation to the Governor General who makes a Minimum Wages Order.¹⁴ Historically, changes have come into effect in the following April of each year.¹⁵ In 2014, the Ministry of Business, Innovation and Employment (MBIE) report *Minimum Wage Review 2014* estimated that 62 700 employees were paid at minimum wages, equating to 2.7 per cent of all employees.¹⁶

In reviewing minimum wages, the following papers have been published annually since 2006 by the MBIE:¹⁷

- A Cabinet Paper which makes the recommendation in relation to the Minimum Wage Order;
- An Officials' Report which is prepared to fulfil the obligations under the Minimum Wage Act to review minimum wage rates; and
- A Regulatory Impact Statement which provides analysis of the options for the Minister of Labour in setting minimum rates.¹⁸

While the Minimum Wage Act does not specifically require consultation to be undertaken in reviewing minimum wages, the MBIE have consulted with Business NZ and the New Zealand

¹¹ National minimum wage employees were classified by the Australian Government as adult non-managerial employees who had their pay set through an unregistered individual common law arrangement with average ordinary time earnings of up to \$16.50 per hour. The earnings of casual employees were divided by 1.25 to adjust for the casual loading. This specific definition results in very low estimates of minimum wage recipients.

¹² Fair Work Act s. 682

¹³ Minimum Wage Act, s. 5.

¹⁴ Minimum Wage Act, s. 5.

¹⁵ *Minimum Wage Review 2014: Regulatory Impact Statement*, Ministry of Business, Innovation & Employment New Zealand, para. 80.

¹⁶ *Minimum Wage Review 2014: Officials' Report*, Ministry of Business, Innovation & Employment New Zealand, para. 14.

¹⁷ Minimum wage background papers, accessed from New Zealand at Work: <http://employment.govt.nz/er/pay/backgroundpapers/index.asp>

¹⁸ Minimum wage background papers, accessed from New Zealand at Work: <http://employment.govt.nz/er/pay/backgroundpapers/2014/index.asp>

Council of Trade Unions in preparing the Officials' Reports in the years 2012–2014.¹⁹ The MBIE has also invited submissions from stakeholders more generally in the years 2007–2011.²⁰

The Minimum Wage Act requires that the minimum rate for adults be specified as an hourly amount.²¹ The Minimum Wage Act does not specify criteria for determining appropriate minimum wage increases, however, the *Minimum Wage Review 2014 and Minimum Wage Order 2015: Cabinet Paper* states the New Zealand government's objective in reviewing the minimum wage rates is "to keep increasing the minimum wage over time to protect the real incomes of low-paid workers while minimising job losses".²² Further, the MBIE set out the following factors in considering minimum wage rates:²³

- inflation using CPI;
- wage growth using the median wage;
- restraints on employment; and
- other relevant factors.²⁴

The Minimum Wage Act applies to all workers in New Zealand except apprentices and inmates of charitable institutions listed in the Act.²⁵ The Minimum Wage Act also provides that exemption permits may be issued setting a lower minimum rate for a worker who is limited in their work capacity by disability.²⁶

The adult minimum applies to employees aged 16 years and over where a starting-out rate or training rate does not apply.²⁷ A starting-out wage of 80 per cent of the minimum applies to:

- 16 and 17 year olds who have not yet completed six months continuous employment with their current employer;²⁸
- 18 and 19 year old employees who receive specified social security benefits and who have not yet completed six months employment with any employer since they started being paid social security benefits;²⁹ and

¹⁹ See: *Minimum Wage Review 2014: Officials' Report*, Ministry of Business, Innovation & Employment New Zealand, para 110; *Minimum Wage Review 2013: Officials' Report*, Ministry of Business, Innovation & Employment New Zealand, para 105; *Minimum Wage Review 2012: Officials' Report*, Ministry of Business, Innovation & Employment New Zealand, para 72.

²⁰ See, for example: *Minimum Wage Review 2011: Officials' Report*, Ministry of Business, Innovation & Employment New Zealand, para 25; *Minimum Wage Review 2010: Officials' Report*, Ministry of Business, Innovation & Employment New Zealand, Appendix 3; *Minimum Wage Review 2009: Officials' Report*, Ministry of Business, Innovation & Employment New Zealand, para 30.

²¹ Minimum Wage Act, s. 4(2).

²² *Minimum Wage Review 2014 and Minimum Wage Order 2015: Cabinet paper*, Ministry of Business, Innovation & Employment New Zealand, para. 23.

²³ *Minimum Wage Review 2014 and Minimum Wage Order 2015: Cabinet paper*, Ministry of Business, Innovation & Employment New Zealand, para. 25.

²⁴ *Minimum Wage Review 2014 and Minimum Wage Order 2015: Cabinet paper*, Ministry of Business, Innovation & Employment New Zealand, para. 25.

²⁵ Minimum Wage Act, s. 9(b) and 9(c).

²⁶ Minimum Wage Act, s. 8.

²⁷ Minimum Wage Act, s. 4.

²⁸ Minimum Wage Act, s. 4A(1).

- 16 to 19 year olds who are undertaking industry training for at least 40 credits a year as part of the process of becoming qualified and as required by their employment agreement.³⁰

A training wage of 80 per cent of the minimum also applies to:

- 20 year old trainees who are undertaking industry training for at least 60 credits a year as part of the process of becoming qualified and as required by their employment agreement.³¹

Employees who are supervising or training workers must not be paid less than the minimum wage.³² According to Pacheco (2010), just less than 300,000 workers or nearly 6 per cent of the workforce are paid below or at the minimum wage.

Financial penalties for non-compliance may be imposed by the Employment Relations Authority (Authority) in accordance with the *Employment Relations Act 2000* (NZ).³³ Proceedings may be commenced by the worker and the Authority may investigate and issue a compliance order.³⁴ Penalties of up to \$10,000 for individuals or \$20,000 for a company or corporation may be imposed.³⁵

2.3 France

The current process for adjusting the statutory minimum wage in France, called the *Salaire minimum interprofessionnel de croissance* (SMIC), was introduced in 1970 (Husson, 2015). In introducing the SMIC, the French Government sought to widen employees' participation in the rapid economic growth and increases in living standards experienced by France after 1945 and to narrow the substantial wage inequalities that had developed between high and low wage earners by the late 1960s (Husson, 2015).

The SMIC may be adjusted in one of two ways according to the methods prescribed by the French Labour Code (ILO, 2012b):³⁶

- Automatically, if the consumer price index (CPI) increases by at least two per cent, in which case the SMIC is increased by the same percentage increase as the CPI; and
- By the French Government following an annual review according to criteria specified in the French Labour Code.

The French Government must adjust the minimum wage based on a number of factors specified in the French Labour Code (ILO, 2012b; Cette, 2013; Husson, 2015), by:

- indexing the SMIC to the past annual change in the CPI;

²⁹ Minimum Wage Act, s. 4A(1).

³⁰ Minimum Wage Act, s. 4A(1).

³¹ Minimum Wage Act, s. 4B.

³² Minimum Wage Act, s. 4A(1)(b).

³³ Minimum Wage Act, s. 10–11A; *Employment Relations Act 2000* (NZ), ss. 130, 156, 160.

³⁴ *Employment Relations Act 2000* (NZ), ss. 137–138.

³⁵ *Employment Relations Act 2000* (NZ), s. 135(2)(a)(b).

³⁶ *Code du Travail* [Labour Code] (France).

- indexing the SMIC to half the total increase in the purchasing power of the gross hourly wage earned by workers in the manufacturing sector, as set out in a quarterly inquiry conducted by the Minister of Labour;
- eliminating imbalances between the minimum wage rate and the progression of general economic conditions and income; and
- conducting an analysis of the national budget and the general economic conditions of the nation.

These matters are considered by the National Committee on Collective Agreements (NCCA), which provides an opinion and a report to the French Government on what adjustments should be made to the minimum wage. The NCCA consists of four representatives appointed by the French Government, and an equal number of representatives from peak employee and employer organisations (ILO, 2012b).

In addition to the criteria set out in the French Labour Code, the French Government may also provide an additional discretionary increase to the minimum wage, called the “coup de pousse”, dependent upon the socio-economic and political context of any given year (Husson, 2015).

The SMIC is expressed as a single hourly rate based on a 35 hour working week.³⁷ The French Government must issue the decree adjusting the SMIC on 1 July of each year, with the adjustment commencing on 1 January of the following year (ILO, 2012b; Cette, 2013).

The SMIC applies to all salaried workers in both the private and public sectors (ILO, 2012b) with no differentiation by age (over 18) or region (Cette, 2013). Jauneau and Martinel (2013) (cited in Husson, 2015: 190) have estimated that 12.3 per cent of all private sector workers earned the minimum wage and that of private sector part-time workers, 28.6 per cent earned the minimum wage.

The rate of the minimum wage is modified for a number of workers, including trainees, youth under 18, and workers who are permitted by the French Labour Code to be paid in-kind (ILO, 2012b). Apprentices, young workers on training contracts and young workers on work experience may be paid a percentage of the SMIC depending on age and, for apprentices, number of years of apprenticeship completed (ILO, 2012b). Workers under 17 may be paid 20 per cent less per hour than the SMIC and workers between the ages of 17 and 18 may be paid 10 per cent less than the SMIC if they have less than six months practical experience in the sector they are working in (ILO, 2012b). Workers in some professions, such as café and hotel workers, may be paid partly in-kind if such payment has traditionally formed part of that worker’s pay, the remainder of the value must be paid in legal tender (ILO, 2012b).

Workers with disabilities may not be paid less than an able-bodied worker carrying out the same task, unless the working capacity of a worker is affected by a disability. For workers whose working capacity is affected by a disability, their wages may be partly paid by the French Government to compensate the employer for the business cost of recruiting a worker with a severe disability (ILO, 2012b).

Labour inspectors and the Ministry of Labour are responsible for the enforcement of the French Labour Code and the SMIC, who may work in conjunction with police officers in enforcement

³⁷ In 2003, five separate minimum wage rates were reorganised into one rate commencing in 2005 (Husson, 2015).

operations. As at 2012, a failure to pay the SMIC to a worker may result in a fine of €1524.00 being imposed on a non-complying employer or entity for each violation (ILO, 2012b).

2.4 The United Kingdom

The process for setting a minimum wage in the UK was introduced in 1998 with the enactment of the *National Minimum Wage Act 1998 (UK)* (NMW Act). Before 1998, after the abolition of the remaining wage councils in 1993, no statutory centralised process existed for the setting of a national minimum wage (NMW) in the UK (Griffin, 2015). The passage of the NMW Act also established the Low Pay Commission (LPC) as an independent statutory advisory body to recommend the rate of a NMW to the UK Government (Griffin, 2015). On 1 April 1999, the NMW was set through regulations,³⁸ by the Secretary of State administering the NMW Act,³⁹ following a recommendation by the LPC.⁴⁰

The Secretary of State may adjust the NMW “from time to time”.⁴¹ The Secretary of State was obliged to refer a number of matters to the LPC in order to make the first regulations and to initially set the NMW.⁴² The Secretary of State may, however, refer, at any time, matters arising under the NMW Act to the LPC seeking a report about the LPC’s recommendations on those matters.⁴³

To date, the NMW has been adjusted annually, following the Secretary of State’s referral and a recommendation by the LPC, with the adjustments being made on 1 October (ILO, 2012c). The NMW is expressed as a single hourly rate.

The matters the Secretary of State may refer to the LPC include, but are not limited to:⁴⁴

- what single hourly rate should be prescribed as the NMW;
- how the pay reference period should be determined; and
- whether the NMW should be excluded or modified for certain classes of persons.

If the LPC makes recommendations in relation to the rate of the NMW, the pay reference period or the exclusion or modification of the NMW for certain classes of persons and the Secretary of State decides not to implement or to differ from those recommendations he or she is required to lay a report before Parliament containing reasons for those decisions.⁴⁵

The LPC makes recommendations on the level of four rates of the NMW: the adult rate, the youth development rate for 18–20 year olds, the 16–17 year old rate and the apprentice rate (LPC, 2015a). The recommendations are often expressed as a percentage increase from the previous rate of the NMW and an hourly rate (LPC, 2015b). The recommendations are made on the basis of

³⁸ *National Minimum Wage Regulations 1999 (UK)*, r. 1.

³⁹ NMW Act, s. 2(1).

⁴⁰ NMW Act, s. 5(1).

⁴¹ NMW Act, s. 1(3).

⁴² NMW Act, s. 5(1).

⁴³ NMW Act, ss. 6(1) and (2).

⁴⁴ NMW Act, s. 5(2).

⁴⁵ NMW Act, ss. 5(4) and 6(3).

written submissions and oral evidence made to the LPC as well as commissioned external research projects.

The NMW covers workers working in the UK under contract who have ceased to be of compulsory school age. The adult rate is payable from the age of 21.⁴⁶ The NMW Act prohibits variation in the NMW on the basis of age differentiation over the age of 26, region, occupation, undertaking size or industry sector.⁴⁷ In addition, the application of the NMW is excluded in relation to a number of classes of persons:⁴⁸

- apprentices under 26 who are in the first 12 months of their apprenticeship or apprentices under 19;
- non-family members living in the employer's home who share in the work and leisure activities;
- persons who are homeless or residing in a hostel for homeless persons and in receipt of income support or income-based job seekers' allowance who are performing work in a scheme meeting certain requirements;
- prisoners carrying out work under prison rules;
- residential members of religious and other communities;
- share fisherman;
- voluntary workers employed by a charity or voluntary organisation;
- workers in certain work experience or work training schemes; and
- workers under 18.

Further, the rate of the NMW may be different for a number of other classes of persons:⁴⁹

- piece rate workers;
- trainees and apprentices;
- youth aged 16–17; and
- youth aged 18–20.

The LPC estimates in its 2015 report that around 5.3 per cent of all jobs were minimum wage jobs (LPC, 2015b). According to the LPC, the majority of workers covered by the NMW work in the hospitality, retail, cleaning, social care and employment agency sectors (LPC, 2015b). The Annual Survey of Hours and Earnings in 2015 estimated that around 11 per cent of part-time jobs, temporary jobs and jobs held for less than a year were minimum wage jobs, compared with three per cent of full-time jobs (LPC, 2015b).

The UK does not have a labour inspectorate responsible for enforcing employment law, however, Her Majesty's Revenue and Customs (HMRC) is responsible for enforcement of the NMW (UK Government, 2015). Compliance officers may enter premises and require the production of records

⁴⁶ *National Minimum Wage Regulation 1999 (UK)*, r. 13(1), as amended in October 2010.

⁴⁷ NMW Act, ss. 1(2), 2(8) and 4(2).

⁴⁸ NMW Act, ss. 43–45; *National Minimum Wage Regulations 1999 (UK)*, rr. 12 and 13.

⁴⁹ NMW Act, ss. 43–45; *National Minimum Wage Regulations 1999 (UK)*, rr. 12 and 13.

related to the payment of minimum wages (ILO, 2012c). HMRC may issue compliance notices to employers requiring payment of wages in arrears and a financial penalty for not paying the NMW (ILO, 2012c). The financial penalty is calculated as the rate equal to twice the hourly amount of the NMW (as in force at the date of the penalty notice) in respect of each worker for whom the failure to comply relates (ILO, 2012c). A continuing or serious failure to pay the NMW may result in a conviction and a penalty up to £5000 (ILO, 2012c).

2.5 The United States

The minimum wage in the United States (US) is determined by federal laws, state statutes and local ordinances. The federal minimum wage in the US is set under the *Fair Labour Standards Act 1938 (US)* (FLSA). According to the US Department of Labor (2016), there are 29 states with a minimum wage rate higher than the federal rate, 17 states with a minimum wage rate the same as the federal rate, seven states where the federal minimum applies (five with no minimum wage law and two where state minimum wages are lower than the federal). There are also a number of local ordinances setting minimum wages. For example, an ordinance passed by the Seattle City Council will increase the minimum wage for some employees working within the geographic boundaries of Seattle in three stages to \$15 per hour.⁵⁰

Federal laws in the US are enacted by Congress. While the legislation does not stipulate how frequently the minimum wage should be adjusted, the US Secretary of Labor submits a biennial report to Congress containing information, data, and recommendations regarding the minimum wage, and other matters, established by the FLSA, taking into consideration a number of factors including changes to the cost of living, productivity and the level of wages in manufacturing and the ability of employers to absorb wage increases.⁵¹ The FLSA has been subject to a number of amendments which have adjusted its minimum wage provisions, the most recent of which was the *Fair Minimum Wage Act (2007) (US)*. The *Fair Minimum Wage Act (2007) (US)* raised the federal minimum wage in three stages to \$7.25 in 2009.

The FLSA covers employees and enterprises engaged in interstate commerce and enterprises which have annual sales or business done of at least \$500 000 as well as institutions such as hospitals and schools.⁵² While state statutes and local ordinances tend to base their coverage on geographical boundaries, their coverage also sometimes makes allowances for enterprise size and other matters.⁵³ Federal and state laws setting minimum wages in the US often exempt particular occupations and industries (US Department of Labor, 2016). The FLSA exempts certain workers including some employees in computer-related occupations, certain domestic service workers and certain agricultural workers.⁵⁴ Under the FLSA, employees who receive tips may be paid less than the minimum wage, however if the tips received by the employee fall short of the hourly minimum wage, their employer must make up this difference.⁵⁵

⁵⁰ Seattle, Washington, Seattle Municipal Code, Ordinance Number 124490.

⁵¹ FLSA, s. 204(d).

⁵² FLSA, s. 203(s)

⁵³ For example, the Seattle minimum wage ordinance prescribes different rates for small and large employers as well as prescribing rates with reference to payment of medical insurance by the employer.

⁵⁴ FLSA, s. 213(6), s. 213(15), s. 213(17).

⁵⁵ FLSA, s. 203(m).

Under the FLSA, persons under the age of 20 may be paid \$4.25 for the first 90 calendar days of their employment.⁵⁶ The FLSA also enables the Secretary of Labor to provide for employment for workers with a disability at wages which are lower than the minimum wage.⁵⁷ The National Council on Disability estimated that about 420 000 persons with disabilities are in the program enabled by that part of the legislation.

The FLSA is administered by the Wage and Hours Division within the US Department of Labor.⁵⁸ Administration of state statutes and local ordinances that set minimum wages vary according to locality. For example, in California, the Labor Commissioner's Office (also known as the Division of Labor Standards Enforcement) enforces state labour laws and regulations.

Where states enact minimum wage laws that are more protective of employees than those under the FLSA, the state law applies. As such, there are varied minimum wages across individual states in the US. Eleven states have minimum wages linked to a consumer price index and two American insular areas (American Samoa and the Commonwealth of the Northern Mariana Islands) have special minimum wage rates (US Department of Labour, 2016). A number of states have established minimum wage increases after voters elected to implement them. For example, in Arkansas, an initiated state statute (or initiative statute) supported by the majority of voters in 2014 will raise the minimum wage in that state in three stages.⁵⁹

According to the US Bureau of Labor Statistics (2015), in 2014, 1.3 million workers earned exactly the prevailing federal minimum wage, 1.7 million had wages below the federal minimum with these two groups forming 3.9 per cent of all hourly paid workers. According to the Congressional Budget Office (2014), 1.5 million workers paid by the hour were reported as earning exactly the prevailing federal minimum wage in 2013 and about 1.8 million less than the minimum wage, together amounting to 4.3 per cent of all hourly paid workers. It is recognised that estimates of the total number of workers who are paid at specific rates and would therefore be potentially affected by the setting of minimum wages is uncertain for several reasons (Bound et al., 2001). An analysis of US Bureau of Labor Statistics data by Pew Research (DeSilver, 2014) found that over half of the people at or below the federal minimum wage in the US were aged under 24 years, over half worked part-time, over half worked in the leisure and hospitality industry and nearly half were white women.

2.6 Canada

The making and administration of laws related to labour and employment are divided between the federal, provincial and territorial governments of Canada (Kerr, 2008). The Canadian Parliament has power to set minimum wages only within the federal jurisdiction, whereas the provinces have plenary power to set minimum wages within each of their jurisdictions, except insofar as the federal jurisdiction applies (Blanpain et al., 2007). Territory governments have power to set minimum wages within their jurisdictions subject to the powers delegated by the federal government and the application of the federal jurisdiction (Zaslow, 1967).

⁵⁶ FLSA, 206(g).

⁵⁷ FLSA, s. 203(c).

⁵⁸ FLSA, s. 204(a).

⁵⁹ Issue 5, An Act to Increase the Arkansas Minimum Wage.

The federal minimum wage is currently set by the *Canada Labour Code* at the adult rate as legislated for in each province or territory,⁶⁰ however, the federal minimum wage may be adjusted by order of the Governor in Council, that is, the executive branch of the Canadian Government (Kerr, 2008).⁶¹ The *Canada Labour Code* does not prescribe a process for adjusting the federal minimum wage.

A standalone federal minimum wage has not existed in Canada since 1996 (Kerr, 2008). Each province and territory has a different minimum wage and method for setting the provincial or territory minimum wage (ILO, 2012a). Minimum wage adjustments in each province or territory come into effect at different times (Government of Canada, 2016a). It is common between the provinces and territories, however, to express their respective minimum wages as a single hourly adult rate (Government of Canada, 2016a).

As a result of the constitutional division of powers and the operation of the *Canada Labour Code*, 13 different federal minimum wages exist according to the province or territory in which the work is being performed (Kerr, 2008).

The federal minimum wage provisions are estimated to cover about 10 per cent of Canada's workforce,⁶² with the remaining 90 per cent covered by the minimum wage provisions in the employment laws of the provinces and territories (Blanpain et al., 2007). Human Resources and Skills Development Canada (2010) found that, as at 2008, there were 416 employees within the federal jurisdiction being paid at minimum wage, with 44 per cent of those employees working in companies with 100 or more employees.⁶³

Statistics Canada estimated that, as at 2013, there were around one million workers in Canada paid at the minimum wage and the share of minimum wage earners as a proportion of total employees nationally was around 6.7 per cent (Galarneau and Fecteau, 2014). Within this proportion there was significant geographical variation, ranging from 1.8 per cent in Alberta to 9.3 per cent in Prince Edward Island (Galarneau and Fecteau, 2014). It was also found that, "youth, women and persons with a low level of education were the groups most likely to be paid at minimum wage", as well as part-time employees and employees in the retail trade and food and accommodation sectors (Galarneau and Fecteau, 2014).

Minimum wages in the provinces and territories may be modified from the standard adult rate for a number of classes of workers or industry sectors, such as (Government of Canada, 2005; 2016b):

⁶⁰ *Canada Labour Code*, RSC 1985, c L-2, ss. 178–181; s. 178(3).

⁶¹ *Canada Labour Code*, RSC 1985, c L-2, s. 178(3).

⁶² Workers covered by the *Canada Labour Code* include: 'those employed in businesses and organizations whose main activities include railways, road transport, ferries, canals, tunnels, and bridges that extend beyond the border of a province or Canada; air transport, aircraft operations, and aerodromes; shipping and shipping services; telephone, telegraph and cable systems; radio and television broadcasting; banks; pipelines; most grain elevators; flour and seed mills, feed warehouse and grain-seed cleaning plants; uranium mining and processing; and most federal Crown corporations, such as Canada Post and Canada Mortgage and Housing Corporation. It also applies to a work, undertaking or business outside of the exclusive legislative authority of the legislatures of the provinces, which would include businesses and organizations operating in First Nations communities across the country. Self-employed workers are not covered under minimum wage legislation, irrespective of jurisdiction' (Kerr, 2008: 2).

⁶³ An updated dataset covering 2015–16 is scheduled for release by Statistics Canada in October 2016 <<http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5076>>.

- commercial salespersons; automobile, truck or bus salespersons; mobile or residential home salespersons; farm machinery salespersons; construction equipment salespersons and commission salespersons who solicit orders for later delivery (Alberta);
- crop harvesters (British Columbia);
- domestic employees (Alberta and British Columbia);
- employees who usually receive gratuities (Quebec);
- employees whose hours of work are unverifiable and who are not strictly remunerated by commission (New Brunswick);
- government construction work (New Brunswick and Yukon);
- homeworkers (Ontario);
- hunting and fishing guides (Ontario);
- inexperienced employees (New Brunswick and Nova Scotia);
- liquor servers (Alberta, British Columbia and Ontario);
- live-in camp leaders (British Columbia and New Brunswick);
- logging or forest operations (Nova Scotia);
- non-mechanised operations relating to the picking of raspberries or strawberries (Quebec);
- resident care takers (British Columbia);
- sectors of the construction industry (Manitoba and Nova Scotia);
- security guards (Manitoba); and
- students under the age of 18 (Ontario).⁶⁴

Enforcement of provincial and territory labour laws are the responsibility of the respective provinces and territories (ILO, 2012a). Many provinces and territories, such as Ontario and Manitoba, have labour inspectorates with powers to investigate and enforce labour laws, including underpayments of wages and non-compliance with minimum wages (ILO, 2012a). Whether criminal penalties apply to the underpayment of wages or failure to comply with an order to repay underpayments also varies from place to place (ILO, 2012a).

⁶⁴ Separate minimum wages for young workers may be deemed contrary to the Canadian *Charter of Rights and Freedoms* which prohibits discrimination on the basis of age (Government of Canada, 2005).

3 Statistical analysis

It is common to judge the effects of public policy measures in terms of efficiency and equity criteria, though we can only address the former indirectly by examining any effects resulting from the level of a minimum wage, which should be different between the three high minimum wage countries and the three low minimum wage countries.

We first compare minimum wages in each country. Then we look at various measures of economic performance such as economic growth rates, productivity growth trends, unemployment, and employment to population ratios. Equity implies that the minimum wage should narrow the income distribution, particularly at the lower end. We therefore consider the Gini coefficient as one measure of inequality and disposable income decile ratios as another, across the six countries.

3.1 Minimum wages

We recognise that making international comparisons is not straightforward as various assumptions have to be made in order to construct hourly wage rates, different age groups covered, issues with the earnings data (whether gross or net earnings should be considered) and whether exchange rates or purchasing power parities should be the basis of comparison. This is in addition to the different legislative frameworks as described in the previous chapter. We rely to a considerable extent on data provided by the OECD, as this is the only source that is able to provide a comparison of various economic indicators across different countries, and it is worth noting the following statement made by their statistics branch (OECD Statistics, 2015):

For cross country comparisons data on minimum wage levels are further supplemented with another measure of minimum wages relative to average wages, that is, the ratio of minimum wages to median earnings of full-time employees. Median rather than mean earnings provide a better basis for international comparisons as it accounts for differences in earnings dispersion across countries. However, while the median of basic earnings of full-time workers—i.e. excluding overtime and bonus payments—are, ideally, the preferred measure of average wages for international comparisons of minimum-to-median earnings, they are not available for a large number of countries.⁶⁵

We define the minimum wage in hourly terms. This enables us in principle to account for part-time workers who are disproportionately found among minimum wage employees, as are women, many of whom tend to work part-time. In Table 3.1 we present data for 2014 for nominal minimum wages in own currencies, minimum wages adjusted for exchange rates and minimum wages adjusted in terms of purchasing power parities (PPPs). The PPP conversion factor is the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as a US dollar would buy in the US. It reflects the impact of any changes on the living standards of people. The exchange rate measure suggests the minimum is highest in Australia, but the PPP measure suggests the minimum is highest in France. PPP rates are relatively stable over time compared with the exchange rate correction, which is very volatile, rapidly adjusts to changes in the market and is only relevant for internationally traded goods.

⁶⁵ OECD Statistics (2015), *Minimum relative to average wages of full-time workers*.

Table 3.1: Nominal and adjusted minimum wages, 2014 yearly averages

	Nominal minimum wage	Exchange rate	Adjusted for exchange rate (\$US)	Purchasing power parities	Adjusted for purchasing power parities (\$)
France	9.61 (Euro)	0.75	12.80	0.87	11.01
Australia	16.87 (Australian Dollar)	1.11	15.21	1.55	10.87
New Zealand	14.25 (New Zealand Dollar)	1.21	11.82	1.56	9.13
United Kingdom	6.50 (Pound Sterling)	0.61	10.70	0.79	8.20
Canada	10.14 (Canadian Dollar)	1.11	9.17	1.30	7.77
United States	7.25 (US Dollar)	1.00	7.25	1.00	7.25

Note: The minimum wage in Canada is a weighted average of province/territory rates (weighted by the labour force) and provided by the national authorities. The rates in the US are federal rates provided by the national authorities. Nominal minimum rates refer to the adult rate, the starting age of which varies across countries. In France the full minimum wage applies at age 18. In Australia and the UK (in this case from 1 October 2010 only) the adult wage applies at age 21. In New Zealand from April 2008 all employees aged 16 and over are entitled to the adult minimum wage, except for new entrants and employees to whom the training minimum rate applies. In Canada the full minimum wage applies at all ages, except in Ontario which has a youth rate for students aged under 18 and working for no more than 28 hours a week. In the US the full minimum wage applies at all ages, except below age 20 when a lower wage of \$4.25 can apply for the first 90 days in any job. In all countries special rates apply to apprenticeships. The OECD have advised us that the PPP have been calculated as an average over the calendar year.

Source: OECD Statistics (2015).

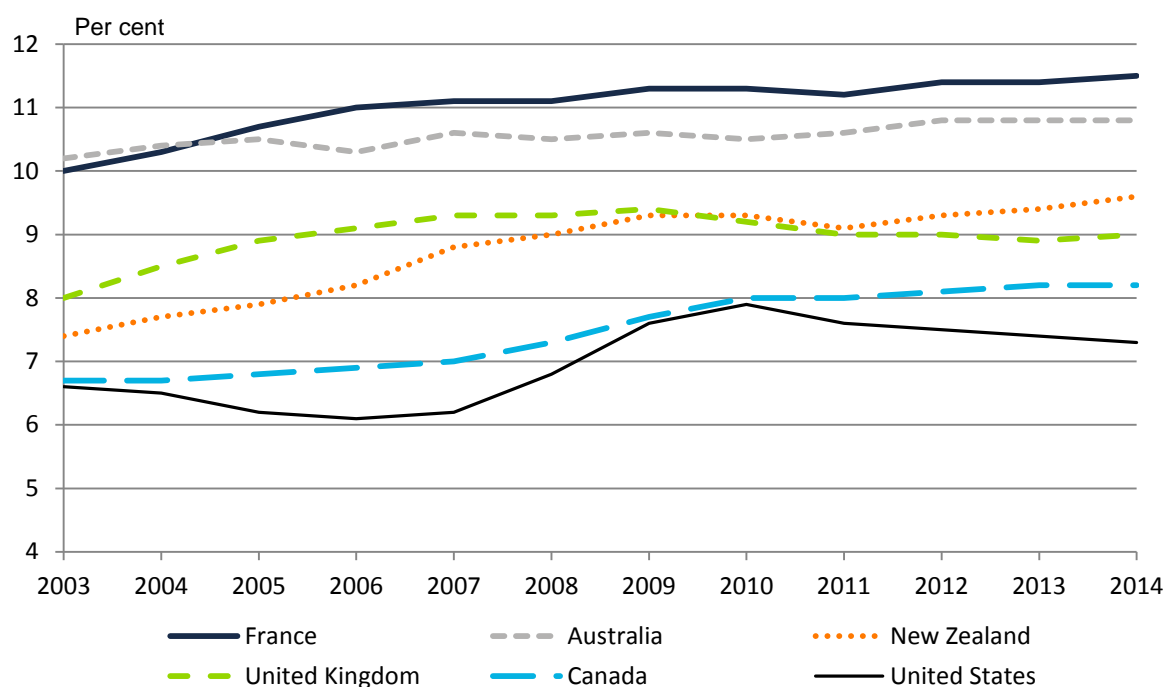
Table 3.2 presents data for real minimum wages in 2014 constant prices, using PPP based on US dollars. Real hourly minimum wages are calculated first by deflating the series using the CPI, taking 2014 as the base year. The series is then converted into a common currency unit (i.e., US dollars) using PPP for private consumption expenditure in 2014. The overall impression is that minimum wages have held their value over time as the figure is higher in 2014 than in 2003 for all six countries, though the UK peaked in 2009 and the US in 2010. There is not much evidence of real minimum wages being adversely affected by the global financial crisis apart from in the UK. France and Australia stand out as having the highest minima in real terms, while Canada and the US have the lowest, as Figure 3.1 makes apparent. Australia was exceptional in freezing the minimum wage in 2009. In all countries, the real value of the minimum wage increased across the whole period, ranging from 5.9 per cent in Australia to 29.7 per cent in New Zealand. In fact, New Zealand started the period with lower real wages than the UK and only overtook the UK in 2009–10 (see Figure 3.1).

Table 3.2: Real minimum wages in 2014 constant prices at 2014 US Dollar PPPs

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2003–2014 growth rate (%)
France	10.0	10.3	10.7	11.0	11.1	11.1	11.3	11.3	11.2	11.4	11.4	11.5	15.0
Australia	10.2	10.4	10.5	10.3	10.6	10.5	10.6	10.5	10.6	10.8	10.8	10.8	5.9
New Zealand	7.4	7.7	7.9	8.2	8.8	9.0	9.3	9.3	9.1	9.3	9.4	9.6	29.7
United Kingdom	8.0	8.5	8.9	9.1	9.3	9.3	9.4	9.2	9.0	9.0	8.9	9.0	12.5
Canada	6.7	6.7	6.8	6.9	7.0	7.3	7.7	8.0	8.0	8.1	8.2	8.2	22.4
United States	6.6	6.5	6.2	6.1	6.2	6.8	7.6	7.9	7.6	7.5	7.4	7.3	10.6

Note: The data are deflated by national consumer price indices and then converted into a common currency unit using \$US PPPs for private consumption expenditures.

Source: OECD Statistics (2015).

Figure 3.1: Real minimum wages in 2014 constant prices at 2014 US Dollar PPPs

Note: Figure provided by the authors using the numbers from Table 3.2.

Source: OECD Statistics (2015).

We need to take into account not only the level of the minimum wage, but also its bite, which is defined as the ratio of the minimum wage to the mean or median wage. A higher ratio of the minimum wage to the median wage implies a stronger bite, since this suggests that there is not much difference between the minimum wage and the wage received by the median worker, so that any employment consequences from an increase in the minimum wage should be that much greater. The bite is sometimes referred to as the Kaitz index after its originator. This, however, does not take into account the number of workers actually covered by the existing minimum. Rycx and Kampelmann (2012) note that international comparisons of Kaitz indices are sensitive to the inclusion or otherwise of bonuses, overtime and other additional payments, which may affect productivity, as well as to the progressivity of the tax system.

The bite is highest in France and Australia and lowest in the UK and the US and even more so if we allow for the proportion of workers on the minimum wage in each of these countries. For the sake of completeness we present data both for the mean (Table 3.3) and the median (Table 3.4), though the latter may be regarded as superior in so far as it removes the effect of very high earners. The median wage measure always produces a higher measured bite than the mean measure. Focusing on the median measure in Table 3.4 the bite has been increasing in all countries apart from Australia where it has declined from 58 per cent in 2003 to 53 per cent in 2014, though exceeded only by France and New Zealand in that year.

Table 3.3: Kaitz index (measured as the ratio of the minimum wage to the average wage)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	0.47	0.48	0.49	0.50	0.50	0.50	0.50	0.49	0.49	0.50	0.50	0.50
Australia	0.50	0.50	0.50	0.46	0.46	0.45	0.45	0.45	0.45	0.44	0.44	0.43
New Zealand	0.46	0.47	0.47	0.49	0.49	0.51	0.52	0.51	0.51	0.51	0.51	0.51
United Kingdom	0.35	0.36	0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.39	0.39	0.40
Canada	0.36	0.36	0.36	0.36	0.36	0.37	0.38	0.39	0.39	0.40	0.39	0.40
United States	0.26	0.25	0.25	0.24	0.24	0.25	0.27	0.28	0.28	0.27	0.27	0.27

Note: In all cases the minimum wage refers to the basic rate for adults. The average hourly wage is for full-time workers including overtime pay and bonuses.

Source: OECD Statistics (2015).

Table 3.4: Kaitz index (measured as the ratio of the minimum wage to the median wage)

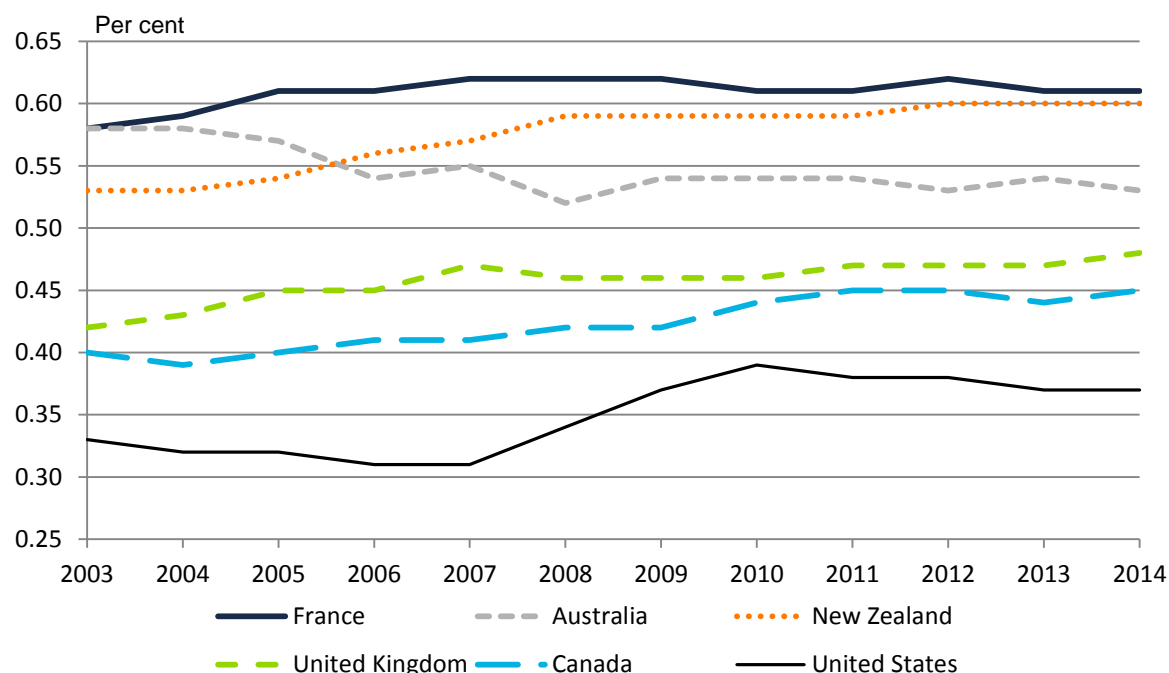
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	0.58	0.59	0.61	0.61	0.62	0.62	0.62	0.61	0.61	0.62	0.61	0.61
Australia	0.58	0.58	0.57	0.54	0.55	0.52	0.54	0.54	0.54	0.53	0.54	0.53
New Zealand	0.53	0.53	0.54	0.56	0.57	0.59	0.59	0.59	0.59	0.60	0.60	0.60
United Kingdom	0.42	0.43	0.45	0.45	0.47	0.46	0.46	0.46	0.47	0.47	0.47	0.48
Canada	0.40	0.39	0.40	0.41	0.41	0.42	0.42	0.44	0.45	0.45	0.44	0.45
United States	0.33	0.32	0.32	0.31	0.31	0.34	0.37	0.39	0.38	0.38	0.37	0.37

Note: In all cases the minimum wage refers to the basic rate for adults. The average hourly wage is for full-time workers including overtime pay and bonuses.

Source: OECD Statistics (2015).

As Figure 3.2 makes clear Australia and New Zealand have divergent trends with the bite in New Zealand overtaking that in Australia in 2005–06. Why Australia is so different in this respect is unclear, but it is consistent with Table 3.22 which shows that the real value of the minimum increased more slowly in Australia than elsewhere. It helps to explain, however, why Australia has performed relatively well in terms of labour market outcomes. A high absolute minimum wage has been moderated by a relatively small rate of increase in its level.

Figure 3.2: Kaitz index (measured as the ratio of the minimum wage to the median wage)



Note: Figure provided by the authors using the numbers from Table 3.4.

Source: OECD Statistics (2015).

Tables 3.3 and 3.4 implicitly assume that employers pay all affected workers the full minimum wage, and that there are no wage spill-overs in the sense that those paid above the minima do not have the increase in minimum wages passed on to them. In that case there should be a clearly identifiable spike in the distribution of workers around the minimum wage.

There have been few studies of this in the countries with which we are concerned with here, but early UK studies based on aggregate evidence suggest no strong spill-over effects (see, for example, Manning and Dickens, 2004, and Stewart, 2012). However, using an approach based on an imperfect competition model, Butcher, Dickens and Manning (2012) find that in years when the NMW is increased relative to the median, wages at the bottom of the distribution rise and the increase is much more marked for women relative to men, younger age groups relative to older age groups and low wage regions as opposed to high wage regions. Thus, while the NMW has not affected employment it has affected the lower end of the wage distribution. Studies in the US based on a period when the bite of the federal minimum wage was declining also suggest that spill-overs are present (see Lee, 1999, and Teulings, 2000 and 2003) and extend up to a wage 25 per cent higher than the minimum in the retail sector (Wicks-Lim, 2008). In France, Gautie (2010) reports a strong spill-over effect for the 2000 to 2005 period of minimum wage rises. This effect is 100 per

cent for wages up to 10 per cent above the minimum wage and extends to a wage level twice as high as the minimum wage, equivalent to a wage above the 50 percentile.

As far as Australia is concerned, Buchanan et al. (2013) investigated the impact of minimum wage adjustments on non-award-reliant employees working in award-reliant organisations. Using the Fair Work Commission's, *Award Reliance Survey*, the analysis found that among award-reliant organisations, around 30 per cent of their employees that were covered by over-award arrangements received the minimum wage increase in 2012.

3.2 Labour market transitions

It is of interest to researchers and policymakers alike to determine whether a national minimum wage is a stepping stone to higher wages or a trap from which it is difficult to escape or part of a low wage–no wage cycle. Obviously, if minimum wage jobs are mainly entry level jobs with only a short-term effect on earnings this is a less serious problem than if they are mainly in unskilled jobs providing workers with few opportunities to escape to better paid jobs. To study this requires dynamic analysis and there are relatively few examples. We are unaware of research on this issue in New Zealand, France and Canada. In the US, two studies examined the problem before the period we focus upon. Smith and Vavrichek (1992) reported that over 60 per cent of workers in receipt of the minimum wage in 1984 were earning more than the minimum one year later. Evan and McPherson (2003) compared minimum wage workers with a comparison group earning above the minimum, using panel data drawn from the Current Population Survey over the period 1977 to 1999. Their evidence suggests that minimum wage jobs tend to be entry level jobs which are also of relatively short duration for a large majority of workers. For the UK, Jones et al. (2005), using the longitudinal element of the Labour Force Survey over the period 1999 to 2003 also found that minimum wage jobs were of relatively short duration and a substantial number of such workers moved into higher paid employment over this period. For over half of them the upward adjustment of pay was over 10 per cent higher than the existing minimum wage. The expected average duration of a minimum wage job was only a year and a half.

There are also a number of UK and Australian studies which examine the dynamics of low-paid workers. These find evidence of state dependence among low paid workers relative to those who are not in the labour force, unemployed or on higher pay, which means that for some at least it may not be easy to escape from low pay. At the same time, however, there appears to be a stepping stone effect in so far as those who are currently on low pay are more likely to move in to higher pay in the future than those who are either not in the labour force or unemployed. For a good example of such studies see Buddelmeyer, Lee and Wooden (2010), Cai (2014) and Mavromaras, Sloane and Wei (2015) for Australia and Stewart and Swaffield (1997) and Stewart (2007) for Britain. There is a caveat, however, since the minimum wage occurs at a lower point in the earnings distribution than is the case for those on low pay, which is most often defined as earnings at or below two-thirds of the median level of earnings. We cannot simply assume that the mobility patterns of both groups will be the same.

3.3 Work incentives

Tables 3.3 and 3.4 in the previous section also take no account of the effects of taxation on both the net income of employees and the labour costs of the employer. There are, however, offsetting policies to provide incentives to work with tax reliefs or in work benefits and similarly there may be some offsets for employers. Looking at the costs faced by employers, the OECD estimates that

payroll taxes and social contributions added on average about 18 per cent to the cost of employing minimum wage workers in 2006. The OECD has examined the tax treatment of minimum wages over the period 2000 to 2006 (OECD, 2007). OECD (2015) reports that even at the very bottom of the wage distribution, taxes and social security payments payable by employees can substantially reduce take home pay.⁶⁶ At the same time, taxes and other mandatory non-wage labour costs payable by employers also push up the costs of employing minimum wage workers. Thus, such payments drive a wedge between labour costs from the employer's perspective and workers' take home pay, and the size of the overall tax burden has implications for how well minimum wages perform both in supporting low wage workers and low income families, while at the same time avoiding significant job losses.

Table 3.5 shows the average tax rates for single full-time workers in terms of personal income tax rates plus employee personal social security contributions. These are shown for minimum wage employees, low-paid employees (defined as those earning 67 per cent of those on the average wage) and those on the average wage. In each country the rates are progressive, but rates are higher in France than elsewhere.

Table 3.5: Average tax rates for single full-time workers at different wage levels, personal income tax plus employee social security contributions, per cent

	2000			2006		
	MW	67% AW	AW	MW	67% AW	AW
France	21.0	25.7	28.8	16.7	26.1	29.1
Australia	15.4	20.7	26.1	14.7	19.9	23.7
New Zealand	17.4	18.6	19.4	18.3	19.0	20.9
United Kingdom	11.7	22.2	25.5	12.7	23.7	26.8
Canada	15.3	19.6	25.4	13.8	20.4	24.2
United States	16.3	21.1	23.9	14.5	20.6	23.4

Source: OECD (2007).

Table 3.6 provides figures for total labour costs per hour including not only wages but also payroll taxes and social security payments payable by employers in our six countries for single full-time minimum wage workers. In 2006, these costs were twice as high in France as in the United States, with the UK not far behind. These costs were also 46 per cent higher in Australia than in New Zealand.

Table 3.6: Total labour cost per hour for single full-time minimum-wage workers, \$US at 2006 market exchange rates and constant prices

	2000	2001	2002	2003	2004	2005	2006
France	10.82	11.05	11.17	11.40	11.33	11.66	11.92
Australia	9.36	9.30	9.33	9.45	9.60	9.71	9.60
New Zealand	5.69	5.66	5.72	5.98	6.18	6.34	6.56

⁶⁶ Work incentives can be influenced by the ratio between what the worker would receive in income support when not working and their wage when working, the replacement ratio. Further information on the replacement ratio can be found at <http://www.law.leidenuniv.nl/org/fisceco/economie/hervormingsz/datasetreplacementrates.html>.

An international comparison of minimum wages and labour market outcomes

United Kingdom	8.58	9.01	9.45	9.70	10.15	10.47	10.61
Canada	7.51	7.42	7.36	7.23	7.27	7.33	7.46
United States	6.58	6.40	6.30	6.16	6.00	5.80	5.57

Source: OECD (2007).

Table 3.7 compares labour costs of minimum wage workers as a percentage of those on the average wage. Using the data for 2006, these can be directly compared with the bite figures in Table 3.2. In net terms, the bite in France declines in 2006 from 0.50 to 0.39, while there are modest increases in each of the other countries, with the exception of the US, where the figure rises from 0.27 to 0.33. In general, it seems important to consider the tax and benefit situation if we are accurately to establish the welfare implications of minimum wages for employees and the cost implications for employers.

Table 3.7: Total labour cost for full-time minimum-wage workers as per cent of total labour cost for an average earner, per cent of average wage

	2000	2001	2002	2003	2004	2005	2006
France	37	38	38	39	38	39	39
Australia	50	51	50	49	48	48	47
New Zealand	45	44	45	46	47	48	50
United Kingdom	31	31	32	32	33	34	34
Canada	38	38	37	37	38	38	38
United States	39	38	37	36	35	35	33

Note: Includes payroll taxes and mandatory social contributions.

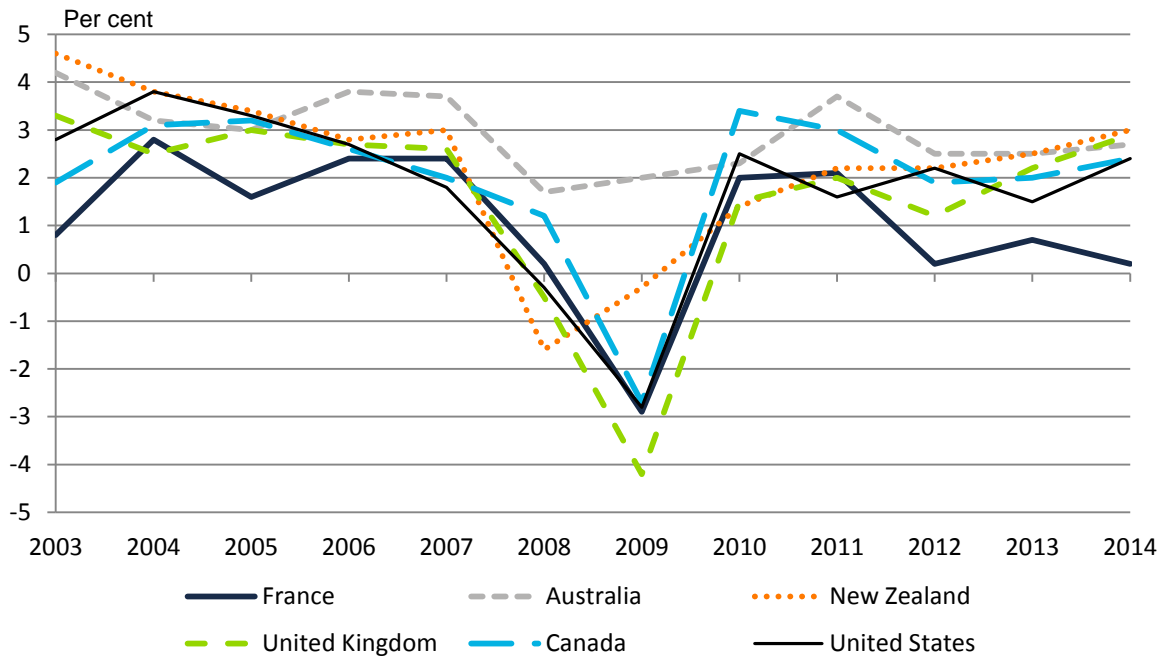
Source: OECD (2007).

Labour market conditions may be influenced by many different factors including the state of the world economy, macroeconomic factors internal to the country under investigation and factors relating to the functioning of the labour market, including changes relating to the minimum wage. What is presented below represents the general environment in which minimum wages policies were implemented and cannot be attributed to the impact of the minimum wage alone.

3.4 Economic growth and labour productivity

Table 3.8 confirms that Australia grew fastest of our six countries over the period 2003 to 2014, whilst the slowest growth was in France. Only Australia did not suffer negative growth in 2009, though Figure 3.3 shows a slowdown in the growth rate there. The pattern of growth rates is similar across countries. When we examine data for the growth of GDP per hour worked in Table 3.9, there appears to be an impact of the global financial crisis between 2007 and 2010 for all countries apart from the US, but only marginally so in Canada and Australia. Over the whole period, labour productivity grew fastest in the US, Australia and Canada, in that order, and slowest in New Zealand, the UK and France, in that order.

Figure 3.3: GDP growth rate, per cent



Note: Figure provided by the authors using the numbers from Table 3.8.

Source: OECD Statistics (2015).

Table 3.8: GDP growth rate, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2003–14 growth rate (%)
France	0.8	2.8	1.6	2.4	2.4	0.2	-2.9	2.0	2.1	0.2	0.7	0.2	11.9
Australia	4.2	3.2	3.0	3.8	3.7	1.7	2.0	2.3	3.7	2.5	2.5	2.7	36.0
New Zealand	4.6	3.8	3.4	2.8	3.0	-1.6	-0.3	1.4	2.2	2.2	2.5	3.0	24.7
United Kingdom	3.3	2.5	3.0	2.7	2.6	-0.5	-4.2	1.5	2.0	1.2	2.2	2.9	16.8
Canada	1.9	3.1	3.2	2.6	2.0	1.2	-2.7	3.4	3.0	1.9	2.0	2.4	24.3
United States	2.8	3.8	3.3	2.7	1.8	-0.3	-2.8	2.5	1.6	2.2	1.5	2.4	20.3

Note: Gross domestic product is estimated by the expenditure approach and expressed in US Dollars in current prices and current PPPs.

Source: OECD Statistics (2015).

Table 3.9: Growth rate of GDP per hour worked, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2003–14 growth rate (%)
France	1.0	0.7	1.3	2.9	-0.2	-0.7	-0.6	1.5	1.1	0.3	1.7	-0.1	8.1
Australia	2.1	0.9	0.7	0.9	0.7	0.6	1.9	-0.3	2.1	3.4	1.6	1.4	14.7
New Zealand	2.0	0.2	0.0	1.6	3.1	-3.2	2.1	-0.7	1.3	3.1	-1.4	-0.9	5.0
United Kingdom	4.0	2.2	0.6	2.4	1.6	0.1	-2.4	1.5	1.2	-1.3	-0.1	0.3	6.1
Canada	0.6	0.3	2.4	1.1	-0.1	-0.1	0.9	1.5	1.4	0.2	1.1	2.0	11.3
United States	3.0	2.6	2.0	0.8	1.0	0.8	2.9	2.6	0.1	0.6	0.9	0.5	15.4

Note: Gross domestic product is estimated by the expenditure approach.

Source: OECD Statistics (2015).

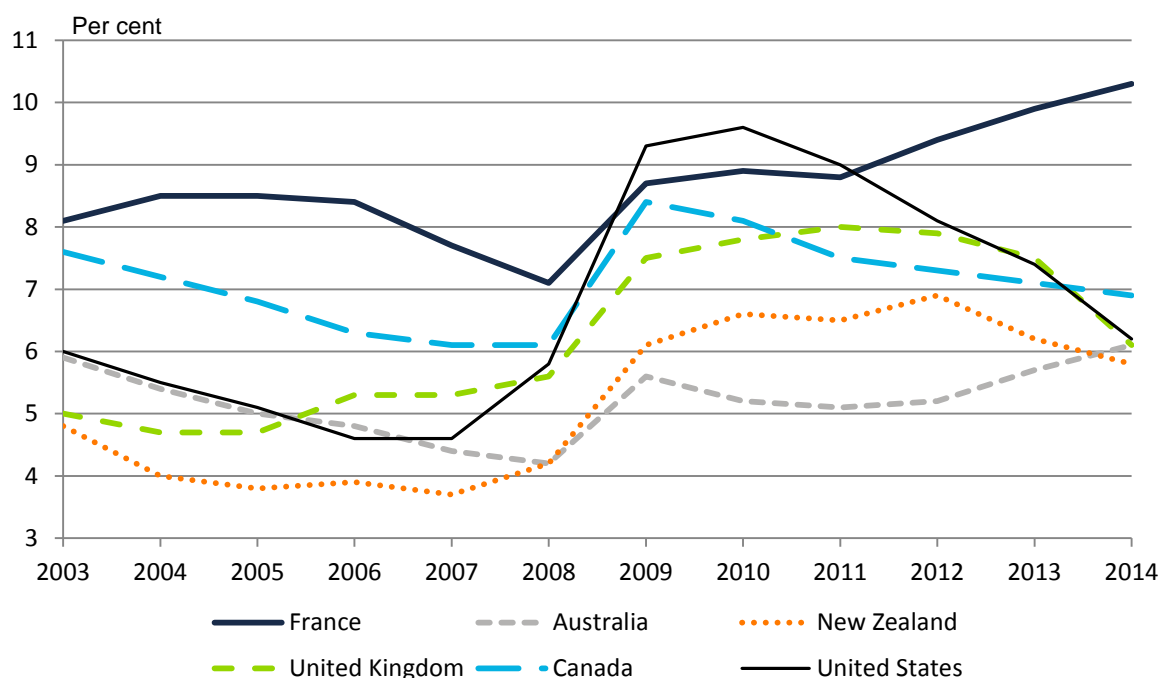
3.5 Labour market

If levels of minimum wages have any effects on employment, we would expect this to be reflected in unemployment rates and employment to population ratios. We have to allow that other influences may be at work here, which could only be identified using an economic model designed to identify causal relationships, which is beyond our brief. However, in descriptive terms in Table 3.10 France stands out among our six countries in having high and increasing unemployment rates, reaching 10.3 per cent in 2014 and while Canada has the second highest rate there is no positive trend here. New Zealand has the lowest unemployment rate, just below that of Australia and the UK. Unemployment rates rose everywhere in 2009 but as Figure 3.4 shows since 2009 unemployment rates have recovered in all countries but France, where they have continued to increase. It should be noted, however, that the trend has also been slightly upwards in the last few years in the US. Finally, we note that variations in unemployment during the period shown here will also be driven by variations in economic growth across countries.

The picture is much more problematical for young workers. For those aged 15–19 (Table 3.11), the proportion unemployed in France has risen from one quarter to one third, and in the other five countries the picture has worsened over time with around 20 per cent unemployed. While the situation of those aged 20–24 in Table 3.12 is better than those aged 15–19, the unemployment rate is still about twice as high as for older persons.

The long-term unemployment rate, that is the proportion of the unemployed who have been out of work for over one year, give some indication of the difficulties facing the unemployed in returning to work. This rate is highest and increasing in France, followed by the UK and the US (Table 3.13). In Australia, Canada and particularly New Zealand, the figure is much lower and declining.

Figure 3.4: Unemployment rate, per cent



Note: Figure provided by the authors using the numbers from Table 3.10.

Source: OECD Statistics (2015).

Table 3.10: Unemployment rate, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	8.1	8.5	8.5	8.4	7.7	7.1	8.7	8.9	8.8	9.4	9.9	10.3
Australia	5.9	5.4	5.0	4.8	4.4	4.2	5.6	5.2	5.1	5.2	5.7	6.1
New Zealand	4.8	4.0	3.8	3.9	3.7	4.2	6.1	6.6	6.5	6.9	6.2	5.8
United Kingdom	5.0	4.7	4.7	5.3	5.3	5.6	7.5	7.8	8.0	7.9	7.5	6.1
Canada	7.6	7.2	6.8	6.3	6.1	6.1	8.4	8.1	7.5	7.3	7.1	6.9
United States	6.0	5.5	5.1	4.6	4.6	5.8	9.3	9.6	9.0	8.1	7.4	6.2

Note: The unemployed comprise all persons above a specified age who during the reference period were without work, usually available for work and seeking work (according to the ILO definition).

Source: OECD Statistics (2015).

Table 3.11: Unemployment rate of people aged 15–19, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	23.4	26.4	26.1	29.1	25.9	23.8	30.8	29.5	29.3	32.8	31.9	32.3
Australia	15.7	15.6	14.8	14.7	13.8	12.8	16.4	16.9	16.2	16.7	16.4	18.4
New Zealand	14.6	13.1	13.4	14.2	14.4	16.2	23.4	25.1	25.7	26.0	24.4	21.0
United Kingdom	16.2	15.9	16.7	18.9	20.8	19.6	25.9	28.5	29.3	29.5	29.3	25.3
Canada	18.1	18.1	16.5	15.9	14.8	15.5	20.0	20.0	19.5	20.1	19.5	18.5
United States	17.4	17.0	16.6	15.4	15.7	18.7	24.3	25.9	24.4	24.0	22.9	19.6

Note: The unemployed comprise all persons above a specified age who during the reference period were without work, usually available for work and seeking work (according to the ILO definition).

Source: OECD Statistics (2015).

Table 3.12: Unemployment rate of people aged 20–24 years, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	17.3	18.5	19.2	19.7	17.2	17.2	21.3	21.2	20.4	21.8	22.0	21.0
Australia	9.2	8.2	7.6	6.7	6.3	6.1	8.2	8.1	8.4	8.6	9.6	10.1
New Zealand	7.3	7.0	6.8	6.7	6.5	7.6	11.7	12.1	12.3	13.2	11.5	11.4
United Kingdom	8.8	8.7	9.4	10.8	10.6	11.1	15.3	14.8	16.0	17.3	17.5	12.7
Canada	10.6	10.3	9.7	8.8	8.7	8.9	12.2	11.6	11.0	11.0	10.4	10.7
United States	10.0	9.4	8.8	8.2	8.2	10.2	14.7	15.5	14.6	13.3	12.8	11.2

Note: The unemployed comprise all persons above a specified age who during the reference period were without work, usually available for work and seeking work (according to the ILO definition).

Source: OECD Statistics (2015).

Table 3.13: Rate of long-term unemployment (unemployed for one year or more) among unemployed people, all ages, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	38.4	36.9	31.0	39.3	40.1	39.9	42.6	40.4	38.9	35.3	41.6	42.2
Australia	31.8	26.2	25.5	24.8	23.2	20.6	20.4	16.4	15.8	15.1	20.6	19.7
New Zealand	23.7	20.4	17.3	15.6	14.0	13.2	9.5	6.6	5.2	6.4	8.8	10.2
United Kingdom	32.6	30.3	25.5	25.0	24.1	25.1	26.7	28.4	28.3	26.6	37.1	37.8
Canada	12.3	10.4	10.3	11.4	10.4	10.1	9.1	8.4	8.1	8.3	13.0	14.7
United States	6.7	6.4	8.9	12.5	13.7	12.6	10.7	10.7	10.9	16.4	29.9	32.2

Note: Long-term unemployment refers to people who have been out of work for 12 months or more. The long-term unemployment rate refers to the proportion of these long-term unemployed among all unemployed.

Source: OECD Statistics (2015).

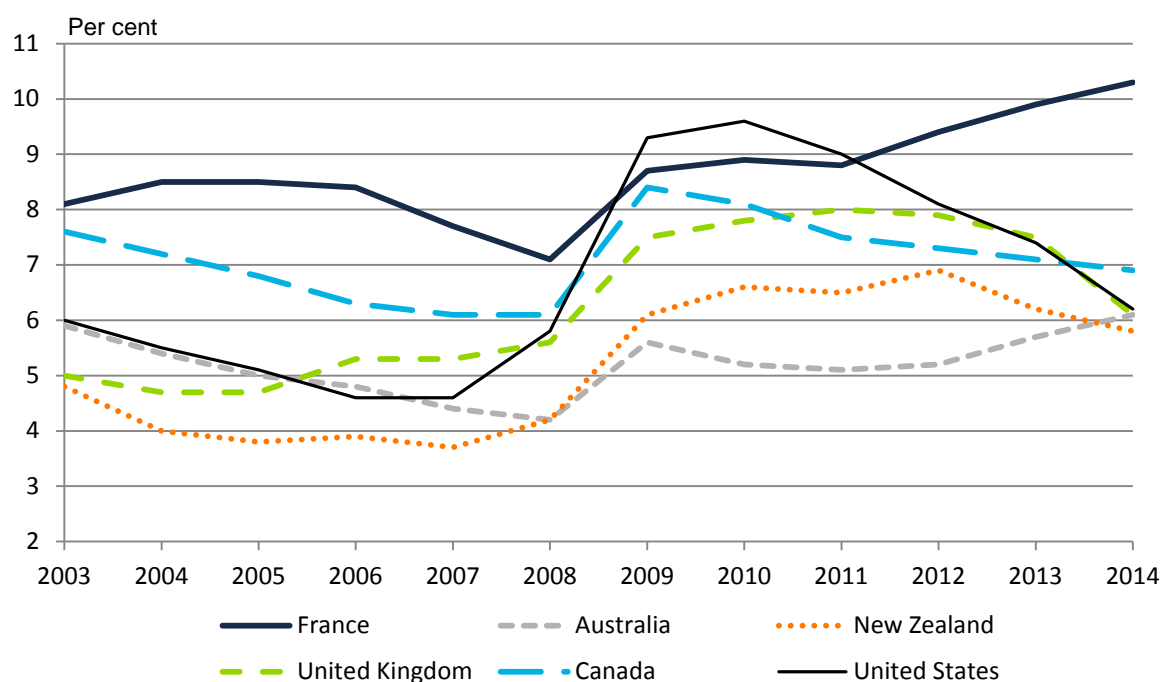
Tables 3.14–3.18 present employment to population ratios for all ages (Table 3.14) and for different age groups (Tables 3.15–3.18). These show the intensity of labour utilisation in the economy, reflecting the level of labour force participation.

For all age groups, the ratios tend to be relatively stable over time, but the level is much lower in France than elsewhere, and particularly so in relation to New Zealand. Figure 3.5 makes the extent to which France is an outlier much more explicit.

Again France is strikingly different when we focus on younger workers. For those aged 15–19, the employment rate is only around 10 per cent compared to over 40 per cent in Australia which has the highest rate among the six countries. While the figure is much higher for those aged 20–24 in France, this is still much lower than in all other five countries. We must of course consider these figures in the context of the arrangements for lower minimum wages applying to younger workers in each country.

For older workers too there are differences across countries. For those aged 60 to 64, employment rates have increased in all countries, but the figure for France is only half the rate in the other five countries. For those aged 65–69, only about 5 per cent remain at work in France which is only one fifth of the figure for Australia, with nearly 40 per cent still in employment in New Zealand and nearly 30 per cent in the US. For the 70–74 age group, not reported in our tables, nearly 20 per cent are still in employment in New Zealand and the US.

Figure 3.5: Employment to population ratios, per cent



Note: Figure provided by the authors using the numbers from Table 3.14.

Source: OECD Statistics (2015).

Table 3.14: Employment to population ratios, all ages, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	51.7	51.5	51.4	51.3	51.9	52.3	51.6	51.4	51.3	51.1	50.9	50.7
Australia	59.8	60.0	61.2	61.7	62.3	62.7	61.8	62.0	62.1	61.7	61.3	60.8
New Zealand	63.1	64.2	65.1	65.6	65.9	65.5	64.0	63.5	63.9	63.3	63.9	65.0
United Kingdom	59.8	59.9	60.0	60.0	59.9	60.1	58.3	58.0	58.0	58.1	58.3	59.3
Canada	62.4	62.6	62.6	62.8	63.4	63.4	61.5	61.5	61.7	61.7	61.8	61.4
United States	62.3	62.3	62.7	63.1	63.0	62.2	59.3	58.5	58.4	58.6	58.6	59.0

Note: The employment to population ratio is defined as the proportion of an economy's working population that is employed. The working age population is defined as persons aged 15 years and older.

Source: OECD Statistics (2015).

Table 3.15: Employment to population ratios, 15–19 years, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	11.0	10.8	11.4	11.2	12.1	12	11	11.1	10.6	9.7	9.9	9.6
Australia	49.9	50.4	51.1	50.8	51.1	51.6	47.6	46.6	46.4	45.6	45.0	43.9
New Zealand	44.8	45.4	46.6	46.4	47.8	45.0	38.7	35.6	33.7	32.6	32.8	36.0
United Kingdom	49.1	49.0	47.5	44.8	42.2	42.8	37.4	35.1	32.9	33.9	31.7	31.8
Canada	45.1	44.5	44.6	45.2	47.1	47.4	42.4	41.3	41.3	39.8	40.1	40.6
United States	36.8	36.4	36.5	36.9	34.8	32.6	28.4	25.9	25.8	26.1	26.6	27.3

Note: The employment to population ratio is defined as the proportion of an economy's working population that is employed. The working age population is defined as persons aged 15 years and older.

Source: OECD Statistics (2015).

Table 3.16: Employment to population ratios, 20–24 years, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	51.3	50.6	49.6	49.0	50.5	51.0	49.6	48.7	48.4	46.9	47.0	47.3
Australia	73.9	73.9	75.3	76.2	76.7	76.8	73.8	73.2	73.1	72.3	71.0	70.2
New Zealand	67.7	67.7	66.6	70.6	69.2	67.7	64.6	64.1	65.1	64.8	65.5	66.9
United Kingdom	68.5	69.0	67.8	67.8	67.5	66.5	62.5	61.8	62.0	61.0	60.5	65.0
Canada	71.0	70.8	70.5	71.6	71.7	71.6	68.1	68.1	68.7	67.8	68.4	68.5
United States	67.8	67.9	68.0	68.5	68.4	66.8	62.2	60.3	60.8	61.5	61.7	62.9

Note: The employment to population ratio is defined as the proportion of an economy's working population that is employed. The working age population is defined as persons aged 15 years and older.

Source: OECD Statistics (2015).

Table 3.17: Employment to population ratios, 60–64 year, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	13.3	13.5	13.8	14.3	15.7	16.3	17.0	17.9	18.9	21.7	23.3	25.1
Australia	37.2	39.5	41.3	43.2	44.8	46.5	48.5	50.3	51.0	51.7	51.5	51.6
New Zealand	53.1	56.1	59.2	60.3	63.8	63.0	65.5	67.4	67.3	67.8	67.8	70.3
United Kingdom	40.4	41.5	41.7	43.1	44.6	46.0	44.9	43.7	44.4	45.3	46.1	48.1
Canada	39.3	41.1	41.7	42.6	44.6	44.9	46.4	46.9	47.2	47.9	49.7	50.0
United States	48.9	49.0	50.0	51.0	51.7	52.1	51.5	51.2	50.8	52.0	52.1	53.3

Note: The employment to population ratio is defined as the proportion of an economy's working population that is employed. The working age population is defined as persons aged 15 years and older.

Source: OECD Statistics (2015).

Table 3.18: Employment to population ratios, 65–69 years, per cent

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	2.5	2.8	2.8	2.4	3.1	3.6	3.6	4.0	5.2	5.9	5.6	5.6
Australia	14.1	15	16.9	18.0	20.2	20.8	23.6	24.2	25.0	26.2	25.9	25.4
New Zealand	21.5	24.5	26.5	28.1	29.8	32.4	33.6	35.3	38.0	39.4	39.6	39.6
United Kingdom	13.2	13.7	14.4	15.8	15.2	16.9	17.7	19.8	19.7	19.6	20.4	20.6
Canada	14.9	15.5	16.7	16.9	18.1	20.4	21.0	22.3	22.5	23.0	24.3	24.8
United States	26.2	26.7	27.3	28.1	28.7	29.4	29.0	29.1	29.9	29.9	30.3	30.0

Note: The employment to population ratio is defined as the proportion of an economy's working population that is employed. The working age population is defined as persons aged 15 years and older.

Source: OECD Statistics (2015).

We conclude that the evidence is rather mixed in the sense that the differences between high and low minimum wage countries are not consistent in terms of their association with labour market outcomes. It seems there are many other factors influencing unemployment and participation rates and even for the high minimum wage countries where we might expect them to be visible they are clearly not (with the exception of France).

3.6 Income distribution

A further consideration is the question of the distribution of earnings or incomes. If the minimum wage compresses the income distribution at the lower end, this should reduce inequality. One measure is the Gini coefficient of disposable income, where a lower figure represents a more equal distribution. That is, a value of zero implies everyone is equal and a value of 1 that all of the country's income is earned by one person. The figures suggest the distribution is more equal in France than elsewhere, though it has become less equal over time, while the US has the most unequal distribution of the six countries and at the same time is becoming more unequal over time (Table 3.19). An alternative measure is the ratio of disposable income in the top decile to the bottom decile. Here, those in the top decile in the US have over six times the disposable income of those in the bottom decile, whereas in France the ratio is only 3.6 to 1 (Table 3.20). Thus, inequality is clearly greatest in the US and least in France. Marchal and Marx (2015) argue that minimum wages are useful not only because they contribute to a fairer wage distribution but also because they provide an absolute wage floor which prevents other direct income support measures being appropriated by employers by way of reducing wages by a similar amount.

As the OECD (2015) points out, studies generally suggest that substantial numbers of minimum wage workers live in households with incomes above the poverty line and that in-work poverty is often the result of low working hours rather than low wage levels or due to the large spill-over effects to multi-earner families (Marchal and Marx, 2015). This leads many economists to suggest that minimum wages are not an efficient device for dealing with poverty (see for example Burkhauser, 2014; and OECD, 2015)

Table 3.19: Gini coefficient of disposable income

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	0.282	0.283	0.288	0.293	0.292	0.293	0.293	0.303	0.309	0.306	-	-
Australia	-	0.315	-	-	-	0.336	-	0.334	-	0.324	-	-
New Zealand	0.335	-	-	-	-	0.33	0.324	-	0.323	0.333	-	-
United Kingdom	0.335	0.331	0.335	0.339	0.341	0.342	0.345	0.341	-	0.351	-	-
Canada	0.316	0.322	0.317	0.317	0.318	0.321	0.32	0.319	0.316	-	-	-
United States	0.374	0.36	0.38	0.384	0.376	0.378	0.379	0.38	0.389	0.389	0.401	-

Source: OECD Statistics (2015).

Table 3.20: P90/P10 disposable income decile ratio

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	-	-	3.4	-	-	3.4	3.5	3.6	3.6	-	-	-
Australia	-	4.1	-	-	-	4.5	-	4.5	-	4.4	-	-
New Zealand	4.3	-	-	-	-	4.2	4.2	-	4.2	-	-	-
United Kingdom	4.2	4.1	4.2	4.2	4.3	4.3	4.2	4.1	-	-	-	-
Canada	4.1	4.2	4.1	4.1	4.0	4.1	4.2	4.1	4.1	-	-	-
United States	-	-	5.9	-	-	5.9	5.9	6.1	6.1	6.2	-	-

Source: OECD Statistics (2015).

3.7 Workforce participation of selected groups

This section looks at the workforce participation of selected groups of people that are likely to be more susceptible to low wages. Here, it is worth re-iterating the comment of Healy et al. (2011):

Where researchers have managed to find data that allow natural experiments to be undertaken with respect to minimum wages the dominant view is that negative employment effects are concentrated on specific product markets (intensely competitive ones, such as restaurants) and on more vulnerable groups of workers that are more likely to be targeted by social inclusion policies, including youths, women, workers with a disability, immigrants, mature age workers, and workers with low education / skills.

As the OECD (2015) suggests, in line with the above quotation, any effects of minimum wage provisions are likely to be felt most strongly among women, youths and other groups which are typically over-represented in the low-paid sector. In the case of those with little education or in temporary jobs (other than in Australia) minimum wages can often amount to over two-thirds of the wage in these groups, which emphasises the need to set and adjust the minimum with regard to the potential effects on these groups. Here we must bear in mind that special provisions often apply in the sense that lower minima may be fixed for these groups. Thus, in the case of young workers, lower minimum wage rates apply as shown in Table 3.21 below.

US studies have typically found that a 10 per cent increase in the minimum wage reduces teenage employment by 1 to 3 per cent. However, setting differential rates by age can give rise to some complex effects. Thus, one UK study (Fidrmuc and Tena, 2013) used a regression discontinuity design in an attempt to find an employment effect from turning 22 and thus becoming entitled to the adult minimum wage at that time. They were unable to detect any effect. Yet, there was a significant and negative effect for male workers at age 21 which they interpret as an anticipation effect on the part of employers. They also find a negative effect on employment for both males and females on turning 18 when the development rate kicks in. Olssen (2011) also used a regression discontinuity approach to examine the short-run effects of youth based minimum wages in Australia and found some evidence that a 10 per cent increase in youth minimum wages resulted in a 6 per cent increase in actual wages. However, there was no evidence of any effect on hours. The literature in this area suggests that the important consideration in the setting of youth minimum wages that they may influence take up of training or apprenticeships, is often addressed using separate arrangements for this age group.

Thus, the effects on young workers seem to be small, but are masked by the special provisions that apply to them.

Table 3.21: Youth minimum wage rates as a percentage of adult minimum wage rates, by country, 2014

Country	Percentage at age 16	Percentage at age 17	Percentage at ages 18/19
France ^a	80	90	100
Australia ^b	47	58	68-83
New Zealand ^c	80-100	80-100	80-100
United Kingdom	58	58	79
Canada	100 ^d	100 ^d	100 ^d
United States ^a	59	59	59

Note: (a) For France and the US, the reduced rates apply to young workers with a tenure of fewer than six months and three months, respectively. (b) These percentages apply to juniors only. Apprentices and trainees have different rates. (c) All employees aged 16 and over are entitled to the adult minimum wage. Except for new entrants and employees to whom the training minimum wage applies. The training minimum wage applies to employees aged 16 and 17, who have not completed six months' continuous employment with their current employer. Employees aged 18 and 19, who have received unemployment benefit for more than six months, will receive the training minimum wage until they have completed six months work for a single employer, after which they will be paid the adult minimum. The training wage also applies to apprentices. (d) All provinces except Ontario, Ontario's youth minimum wage is 94 per cent of the adult minimum wage.

There is strong US evidence that raising the minimum wage can attract more migrants to enter the country. Giulietti (2014) exploited the state variation in the US federal minimum in 1996–97 and 2007–09 to show that the policy induced a sizeable flow of low skilled legal immigrants into the US in both periods. UK studies have generally found limited negative effects of migration on domestic workers and it seems that the minimum wage can play an important role in protecting indigenous workers from unfair wage competition from immigrants (see Zavodny 2014).

Part-time employees make up a substantial proportion of minimum wage workers in all countries. In Tables 3.22 and 3.23 we provide data for France, Australia, New Zealand and the UK for part-time employment which is involuntary in the sense that workers would prefer to work longer hours than they currently do, implying that they are underemployed. Involuntary part-time employment is highest in Australia and lowest in the UK, but has grown more rapidly in France and the UK than in either Australia or New Zealand. Indeed, in the UK employment held up better than expected in the recession precisely because working hours were reduced for existing employees. Among part-time employees, Table 3.23 shows that France has the highest proportion of part-time employees for whom part-time work is involuntary and the UK the least. The converse problem can co-exist (especially in times of high economic activity), namely of workers who would like to be working fewer hours than they do.

Females account for a high proportion of minimum wage workers, but figures are rarely provided separately by gender, perhaps because minimum wages are gender neutral.

Table 3.221: Share of involuntary part-time employees in total employment

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	5.3	5.2	5.5	5.5	5.7	5.8	5.7	5.9	5.7	5.8	7.4	7.5
Australia	7.7	7.3	7.1	6.9	6.6	6.3	7.7	7.4	7.2	7.3	7.8	8.5
New Zealand	5.7	4.5	3.9	3.8	4.1	4.2	5.3	4.8	4.8	5.1	5.0	5.0
United Kingdom	2.1	1.9	2.1	2.2	2.4	-	3.5	4.0	4.7	4.9	5.0	4.7
Canada	-	-	-	-	-	-	-	-	-	-	-	-
United States	-	-	-	-	-	-	-	-	-	-	-	-

Note: Involuntary part-time workers are part-timers working less than 30 hours per week because they could not find a full-time job. However the definitions are not harmonised which hampers the comparisons across countries.

Source: OECD Statistics (2015).

Table 3.22: Share of involuntary part-timers as a per cent of part-time employment

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
France	30.2	29.5	30.4	30.6	31.6	32.8	31.5	31.6	30.6	31.2	39.0	39.3
Australia	27.3	26.3	25.3	24.5	23.9	22.9	26.8	25.3	24.8	25.3	26.5	28.5
New Zealand	24.2	20.0	17.6	17.3	18.1	18.0	22.8	21.2	21.0	22.2	22.8	23.2
United Kingdom	8.1	7.5	8.3	8.9	9.8	-	13.7	15.2	18.1	18.3	19.0	18.3
Canada	-	-	-	-	-	-	-	-	-	-	-	-
United States	-	-	-	-	-	-	-	-	-	-	-	-

Note: Involuntary part-time workers are part-timers working less than 30 hours per week because they could not find a full-time job. However the definitions are not harmonised which hampers the comparisons across countries.

Source: OECD Statistics (2015).

4 Conclusion

This research set out to examine labour market outcomes of Australia and five other countries comparable in terms of economic development and institutional arrangements in the period 2003 to 2014. Three of them—Australia, France and New Zealand—have high minimum wages relative to the OECD average, and three of them—the UK, Canada and the US—low minimum wages measured on the same relative basis. All are high GDP, OECD countries with reliable national statistics to allow for the necessary OECD data development and equalisation.

The research compared several labour market outcomes accompanied by a few more general macroeconomic outcomes. These included short- and long-term unemployment, employment to population ratios, transitions between minimum wage jobs and unemployment, the minimum wage bite, average wages and the earnings distribution, as well as GDP, labour productivity and taxation. The research asked two questions. First, whether there were any discernible associations between these labour market outcomes and the level and coverage of the minimum wage and second, whether the associations between minimum wages and outcomes observed among the high minimum wage countries were different to those observed among the low minimum wage countries. The identification of causal links between minimum wages and outcomes was not within the scope of this research.

Our evidence on associations is somewhat contradictory. France performs relatively badly in terms of a number of aspects. It has relatively high unemployment rates, including long-term unemployment, low employment to population ratios, with young persons and the elderly faring particularly badly and has a lower economic growth rate than the other countries. However, the income distribution is more equal than elsewhere. That is in line with what we might expect given the high and rigidly enforced minimum wage. In contrast, however, Australia and New Zealand the other two countries with high minimum wages compare favourably in terms of most of these measures. Indeed these two countries have the highest rates of economic growth over the period of any of the countries we have examined. It is possible that the limited impact of the global financial crisis in these two countries may have played a role, but this would be very difficult to determine without a detailed econometric analysis. When we consider the three countries with relatively low minimum wages, they do compare favourably with France in terms of labour market outcomes, but have not clearly done any better than Australia or New Zealand.

Perhaps our findings are not surprising given the fact that national minimum wage coverage is generally limited to a relatively small percentage of the workforce and protection is offered to the most vulnerable through exemptions and lower rates for young persons. Often, in fact, there are as many individuals paid below the minimum as at the minimum, though to what extent this is a consequence of exemptions, deliberate under-payment or miscalculation of earnings is unclear and difficult to establish without further detailed data work. In equity terms, however, there is evidence that the minimum wage can make the income distribution more equal at the lower end of the wage distribution.

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