

KOF Swiss Economic Institute

The KOF Education System Factbook:
France

Edition 1, March 2019

KOF

ETH Zurich
KOF Swiss Economic Institute
LEE G 116
Leonhardstrasse 21
8092 Zurich, Switzerland

Phone +41 44 632 42 39
Fax +41 44 632 12 18
www.kof.ethz.ch
kof@kof.ethz.ch

Table of Contents

FOREWORD	V
EDITING AND ACKNOWLEDGEMENTS.....	VI
1. The French Economy and Political System.....	7
1.1 The French Economy.....	7
1.2 The Labour Market.....	9
1.2.1 Overview of the French Labour Market	9
1.2.2 The Youth Labour Market.....	12
1.2.3 The KOF Youth Labour Market Index (KOF YLMI) for France	13
1.3 The Political System	14
1.3.1 Overview of the French Political System	14
1.3.2 Politics and Goals of the Education System	15
2. Formal System of Education.....	17
2.1 Pre-Primary Education.....	20
2.2 Primary Education.....	21
2.3 Lower Secondary Education	21
2.4 Upper Secondary Education	22
2.4.1 General and Technological Path	22
2.4.2 Vocational Path.....	23
2.5 Postsecondary/Higher Education.....	23
2.6 Continuing Education (Adult Education)	24
2.7 Teacher Education	24
3. The System of Vocational and Professional Education and Training.....	25
3.1 Vocational Education and Training (VET; Upper Secondary Education Level)	25
3.1.1 The Certificat d'aptitude professionnelle (Vocational Training Certificate)	26
a) Professional lycées.....	26
b) Centre de formation d'apprentis (apprenticeship training centre).....	27
3.1.2 The Baccalauréat Professionnel (Vocational Baccalaureate).....	27
3.1.3 Brevet Professionnel.....	27
3.1.4 Brevet Technique des Métiers	28
3.2 Professional Education and Training (PET; Post-Secondary Level).....	28
3.2.1 Brevet de maîtrise.....	28
3.2.2 Brevet de technicien supérieur	28
3.2.3 Diplôme Universitaire de Technologie	29
3.2.4 Professional Bachelor.....	29
3.2.5 Professional Master	30

3.3	Regulatory and Institutional Framework of the VPET System	30
3.3.1	Central Elements of VPET Legislation.....	30
3.3.2	Key Actors	30
3.4	Educational Finance of the VPET System	33
3.4.1	Educational finance of the VET system	33
3.4.2	Educational finance of the PET system	34
3.5	Curriculum Development	35
3.5.1	Curriculum Design Phase	36
3.5.2	Curriculum Application Phase.....	36
3.5.3	Curriculum Feedback Phase	37
3.6	Supplying Personnel for the VPET System (Teacher Education)	37
4.	Major Reforms in the Past and Challenges for the Future	39
4.1	Major reforms	39
4.2	Major challenges.....	40
	References	42

List of Abbreviations

GCI	Global Competitiveness Index
GII	Global Innovation Index
GDP	Gross Domestic Product
ISCED	International Standard Classification of Education
KOF	Swiss Economic Institute
OECD	Organisation for Economic Co-operation and Development
PET	Professional Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
VPET	Vocational Professional Education and Training
VPETA	Vocational and Professional Education and Training Act
WEF	World Economic Forum
YLMI	Youth Labour Market Index

List of Figures

Figure 1: Employment by sector (as % of total employment), 1980-2014.....	9
Figure 2: YLM Scoreboard: France versus OECD average, 2016	13
Figure 3: YLM-Index: France vs OECD, 2004-2016	14
Figure 4: The French education system.....	17
Figure 5: Percentage of population that has attained upper secondary or post-secondary non-tertiary education in OECD countries (2015).....	19
Figure 6: Percentage of population that has attained tertiary education in OECD countries (2015)	20
Figure 7: Curriculum Value Chain (CVC)	35

List of Tables

Table 1: Value added and employment by sector, 2017	8
Table 2: Labour force participation rate, unemployment rate by age 2016	10
Table 3: Labour force participation rate, unemployment rate by educational attainment 2015 (persons aged 25-64)	11
Table 4: Gross enrolment rate for different educational levels in France, 2015 (in %)	18
Table 5: Net enrolment rate for different educational levels in France, 2015 (in %)	18
Table 6: Educational attainment for different educational levels, population 25+, 2015 (in %)	19
Table 7: Summary statistics of the French VET system.....	25

FOREWORD

The increasing competitiveness of the world economy as well as the high youth unemployment rates after the worldwide economic crises have put pressure on countries to upgrade the skills of their workforces. Consequently, vocational education and training (VET) has received growing attention in recent years, especially amongst policy-makers. For example, the European Commission defined common objectives and an action plan for the development of VET systems in European countries in the *Bruges Communiqué on Enhanced European Cooperation in Vocational Education and Training for 2011-2020* (European Commission, 2010). In addition, a growing number of US states and other industrialized, transition, and developing countries (for example Hong Kong, Singapore, Chile, Costa Rica, Benin and Nepal) are interested in either implementing VET systems or making their VET system more labour-market oriented.

The appealing outcome of the VET system is that it improves the transition of young people into the labour market by simultaneously providing work experience, remuneration and formal education degrees at the secondary education level. If the VET system is optimally designed, VET providers are in constant dialogue with the demand-side of the labour market, i.e. the companies. This close relationship guarantees that the learned skills are in demand on the labour market. Besides practical skills, VET systems also foster soft-skills such as emotional intelligence, reliability, accuracy, precision, and responsibility, which are important attributes for success in the labour market. Depending on the design and permeability of the education system, VET may also provide access to tertiary level education (according to the ISCED classification): either general education at the tertiary A level or professional education and training (PET) at the tertiary B level. PET provides occupation-specific qualifications that prepare students for highly technical and managerial positions. VET and PET systems are often referred to together as “vocational and professional education training (VPET)” systems.

Few countries have elaborate and efficient VPET systems. Among these is the Swiss VPET system, which is an example of an education system that successfully matches market supply and demand. The Swiss VPET system efficiently introduces adolescents to the labour market, as shown by Switzerland’s 2007-2017 average youth unemployment rate of 8.1 percent compared to 14.8 percent for the OECD average (OECD, 2017a).

Though not many countries have VPET systems that are comparable to Switzerland’s in terms of quality, efficiency and permeability, many have education pathways that involve some kind of practical or school-based vocational education. The purpose of the KOF Education System Factbook Series is to provide information about the education systems of countries across the world, with a special focus on vocational and professional education and training.

In the KOF Education System Factbook: France, we describe the French vocational system and discuss the characteristics that are crucial to the functioning of the system. Essential components comprise the regulatory framework and the governance of the VPET system, the involved actors, and their competencies and duties. The Factbook also provides information regarding the financing of the system and describes the process of curriculum development and the involved actors.

The Factbook is structured as follows: First, we provide an overview of the French economy, labour market, and political system. The second part is dedicated to the description of the formal education system. The third section explains the French vocational education system. The last section offers a perspective on France`s recent education reforms and challenges to be faced in the future.

EDITING AND ACKNOWLEDGEMENTS

This Factbook is edited by Johanna Kemper. We want to thank Noah Bernet for the elaboration of the contents, and Clair Premzic for the excellent language and content editing. Without you, the realization of this Factbook would have been impossible!

The KOF Education System Factbooks has to be regarded as work in progress. The authors do not claim completeness of the information which has been collected carefully and in all conscience. Any suggestions for improvement are highly welcome!

Contact: factbook@kof.ethz.ch

Suggested citation:

KOF Swiss Economic Institute (2019). KOF Education System Factbook: France. KOF Education System Factbooks, ed. 1. Zurich: Swiss Federal Institute of Technology.

1. The French Economy and Political System

One of the main purposes of an education system is to provide the future workforce with the skills needed in the labour market. The particularities of a country's economy and labour market are important factors determining the current and future demand for skills. Therefore, these will briefly be described in the first part of this Factbook. In addition, this part provides an overview of the French political system with emphasis on the description of the education politics.

1.1 The French Economy

The French Economy is the third largest economy in the European Union and the sixth largest economy in the world. In 2016, France's gross domestic product (GDP) per capita amounted to US\$ 37'208, versus US\$ 52'322 in the US and US\$ 38'154 OECD average (OECD, 2018a). Between 1990 and 2016, the French economy grew on average 1.6 percent annually, while the OECD average is 2.1 percent for the same time span (World Bank, 2018).

According to the KOF Economic Globalisation¹ Index, France is ranked 24th out of 178 countries, as compared to Germany, which is ranked 26th (KOF, 2018a). In 2017, France ranked 4th place in the Fortune 500 list, while hosting 31 of the 500 largest firms (based on economic turnover) (Fortune, 2018).

As it is typical for a highly developed country, the tertiary sector is the most important sector of the French economy. The tertiary sector accounted for roughly 81 percent of total employment as well as 79 percent of gross value added in 2017 (Table 1). The degree of regulation of the French economy is rather high despite the fact that the government has privatized many state-owned companies. It maintained partial ownership in many companies and continues to play an important role in French businesses. Between 2007 and 2016 France has remained the country with the highest share of public expenditures among all OECD countries (56.5 percent of GDP in 2016) (OECD, 2017b). The importance of the public administration is also reflected in the labour market statistics: the share of public administration employment of total employment has been 29.9 percent in 2017, compared to EU-28 average of 23.5 percent (Eurostat, 2018a).

¹ The KOF Index of Globalisation measures the economic, social and political dimensions of globalisation.

Table 1: Value added and employment by sector, 2017

Sector	Country: Value added (%)	EU-28: Value added (%)	Country: Employment² (%)	EU-28: Employment¹ (%)
Primary sector	1.7	1.6	2.6	4.4
Agriculture, hunting and forestry, fishing	1.7	1.6	2.6	4.4
Secondary sector	19.4	25	16.6	21.6
Manufacturing, mining and quarrying and other industrial activities	13.9	19.6	10.4	15.3
of which: Manufacturing	11.4	16.3	9.3	13.8
Construction	5.5	5.4	6.2	6.3
Tertiary sector	78.9	73.4	80.6	73.9
Wholesale and retail trade, repairs; hotels and restaurants; transport; information and communication	22.9	24.2	25.6	27.7
Financial intermediation; real estate, renting & business activities	30.4	27.2	19.4	16.5
Public administration, defence, education, health, and other service activities	25.6	22	35.6	29.7

Source: Eurostat (2018a; 2018b).

The primary and secondary sector are both less important in terms of employment and gross value added. In 2017, the secondary sector accounted for 16.6 percent of France's employment and for 19.4 percent of the overall value added, and therefore less than the EU-28 average of 21.6 and 25 percent respectively.

In 2017, only 2.6 percent of total employment and 1.7 percent of value added stemmed from the primary sector. In comparison to the EU-28 average, the French primary sector has been more productive as it accounted for a similar share of value added with a smaller share of total employment (Table 1).

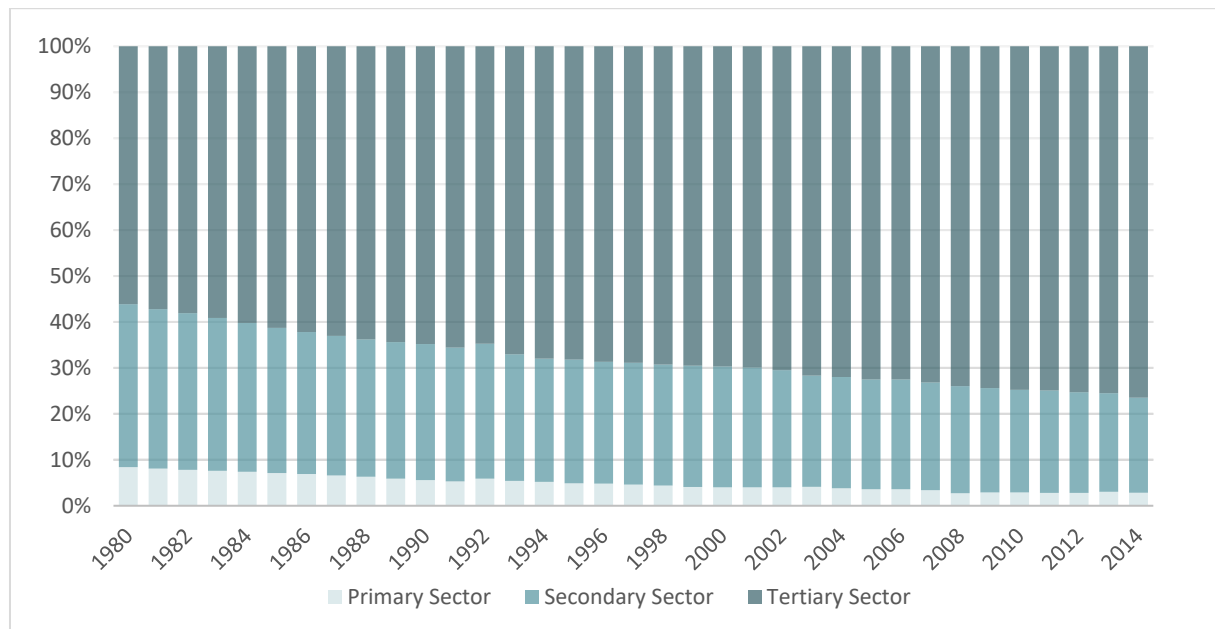
Figure 1 shows the development of the three sectors' employment share from 1980-2014. During this period, the tertiary sector increasingly gained in importance, while the primary, as well as the secondary sector, steadily decreased in their share of total employment.

In the WEF Global Competitive Index (GCI) rankings 2016-2017 (WEF, 2018), France ranked 22th out of 138 countries. The GCI Report states that France is strong in innovation and that the French macroeconomic environment is improving. However, the report sees a lack of efficiency in the goods and labour market and a deterioration of France's capacity to attract

² Due to rounding differences, the sum of all sectors falls below 100 percent.

and retain talents. Wide-ranging labour market reforms announced by the government in July 2016 are expected to boost France's competitiveness.

Figure 1: Employment by sector (as % of total employment), 1980-2014



Source: (World Bank, 2018).

1.2 The Labour Market

In the first part of this section, we will describe the general situation of France's labour market. In the second part, we will refer to the youth labour market in particular.

1.2.1 Overview of the French Labour Market

The French labour market is one of the most regulated concerning employment protection (rank 4 out of 43 countries), according to the 2013 OECD Indicators of Employment Protection. The OECD Index of Employment Protection is a multidimensional index that quantifies the strictness of Employment Protection legislation (EPL) across countries. It is scaled between zero to six, where zero refers to a low level of EPL, and six to a high level of protection. While permanent employment contracts are rather moderately regulated, the protection of temporary contracts against individual and collective dismissals is among the strictest of all OECD countries (OECD, 2015). Traditionally, France is a country with strong employment protection and it has a long history of labour movements.

In 2014, France had a relatively low union density of 8 percent. Germany in comparison had 17.7 percent and Belgium even 53.8 percent (OECD, 2018b). However, French unions have repeatedly shown that they are able to mobilise workers in mass strikes despite low levels of

membership. In 2016, the minimum wage in France was 17'599 Euro per year. In comparison, the minimum wage in Germany was 17'280 Euro and in Spain 9'171 Euro.

Table 2 shows the French labour force participation and unemployment rates along with the OECD average for 2016. In 2016, the French labour force participation rate (15-64 years) was exactly equal to the OECD average. However, the labour market integration of young workers (15-24 years) in France has been below the OECD average: 37.2 percent of the French youth were actively searching for a job or in employment; the OECD average has been 47.2 percent. In 2016, the overall unemployment rate (15-64 years) of France was higher than the OECD average. The youth unemployment has been especially high with 24.1 percent compared to an OECD average of 12.9 percent and continues to be a major challenge for the French government. Also, the unemployment rate of adults (aged 25-64), even though much lower than the youth unemployment, is consistently higher than the OECD average.

Table 2: Labour force participation rate, unemployment rate by age 2016

Age Group	Labour force participation rate		Unemployment rate	
	France	OECD average	France	OECD average
Total (15-64 years)	71.7	71.7	9.8	6.5
Youth (15-24 years)	37.2	47.2	24.1	12.9
Adults (25-64 years)	79.4	77.3	8.3	5.6

Source: (OECD, 2017c).

Like most western economies, the French economy faces a challenge in the ageing of its population and working force. The retirement age in France is 62 for men and women (OECD, 2018c). However, the effective labour force participation rate of adults aged (55-64 years) has only been 37.3 percent (OECD, 2017c). The government plans to increase the retirement age gradually to 67 by 2023. However, the OECD doubts that such a measure is going to bring big benefits without resolving the problem of the low labour market participation of adults older than 55 (OECD, 2018c).

Table 3 shows that the French labour market lies approximately on the OECD average in terms of labour force participation depending on education level. Conversely, the unemployment rates lie above the OECD average for all levels of education. A clear positive correlation between the level of education and the labour force participation respectively a negative correlation between the level of education and the unemployment rate seems to be present.

Table 3: Labour force participation rate, unemployment rate by educational attainment 2015 (persons aged 25-64)

Education Level	Labour force participation		Unemployment rate	
	Country	OECD average	Country	OECD average
Less than upper secondary education	62.9	63.6	14.0	12.4
Upper secondary level education	79.7	80.1	8.8	7.3
Tertiary education	89.0	88.0	5.7	4.9

Source: (OECD, 2015).

1.2.2 The Youth Labour Market

The KOF Swiss Economic Institute developed the KOF Youth Labour Market Index (KOF YLMI) to compare how adolescents participate in the labour market across countries (Renold et al., 2014). The foundation for this index is the critique that a single indicator, such as the unemployment rate, does not suffice to describe the youth labour market adequately nor provide enough information for a comprehensive cross-country analysis. To increase the amount of information analysed and to foster a multi-dimensional approach, the KOF YLMI consists of twelve labour market indicators³ that are grouped into four categories.

Dimensions of the KOF YLMI	
Activity state	<ul style="list-style-type: none"> - Unemployment rate - Relaxed unemployment rate⁴ - Neither in employment nor in education or training rate (NEET rate)
Working conditions	Rate of adolescents: <ul style="list-style-type: none"> - with a temporary contract - in involuntary part-time work - in jobs with atypical working hours - in work at risk of poverty⁵ - Vulnerable unemployment rate⁶
Education	<ul style="list-style-type: none"> - Rate of adolescents in formal education and training - Skills mismatch rate
Transition smoothness	<ul style="list-style-type: none"> - Relative unemployment ratio⁷ - Long-term unemployment rate⁸
Source: Renold et al. (2014).	

The first category describes the *activity state* of youth (ages 15-24 years old) in the labour market. Adolescents are classified according to whether they are employed, in education, or neither (unemployed, discouraged and neither in employment nor in education or training; see info box to the right). The category *working conditions* and the corresponding indicators reflect the type and quality of jobs the working youth have. The *education* category accounts for the share of adolescents in education and training and for the relevance of and their skills on the labour market. The fourth category, *transition smoothness*, connects the other three categories by capturing the school-to-work transition phase of the youth. Each country obtains a score of 1 to 7 on each particular indicator of the KOF YLMI. A higher score reflects a more favourable situation regarding the youth labour market and a more efficient integration of the youth into the labour market.

³ The data for these indicators are collected from different international institutions and cover up to 178 countries for the time period between 1991 and 2012.

⁴ It is calculated as the number of unemployed and discouraged workers as a share of the entire labour force. Discouraged workers have given up the search for work (not actively seeking), although they have no job and are currently available for work (also: "involuntary inactive").

⁵ Those who cannot make a decent living out of their earnings, being at risk of poverty as a percentage of the working population.

⁶ Share of the employed population working on their own account or those working in their family business and thus contributing to the entire family income. Both are less likely to have formal work arrangements and are therefore less protected by labour laws and more exposed to economic risk.

⁷ Is defined as the youth unemployment rate (15-24 years) as a share of the adult unemployment rate (25+). If the youth cohort is affected in the same way than the adult group with respect to unemployment, then the relative unemployment ratio will be equal to one. If the youth are relatively more affected, then the ratio will be bigger than one.

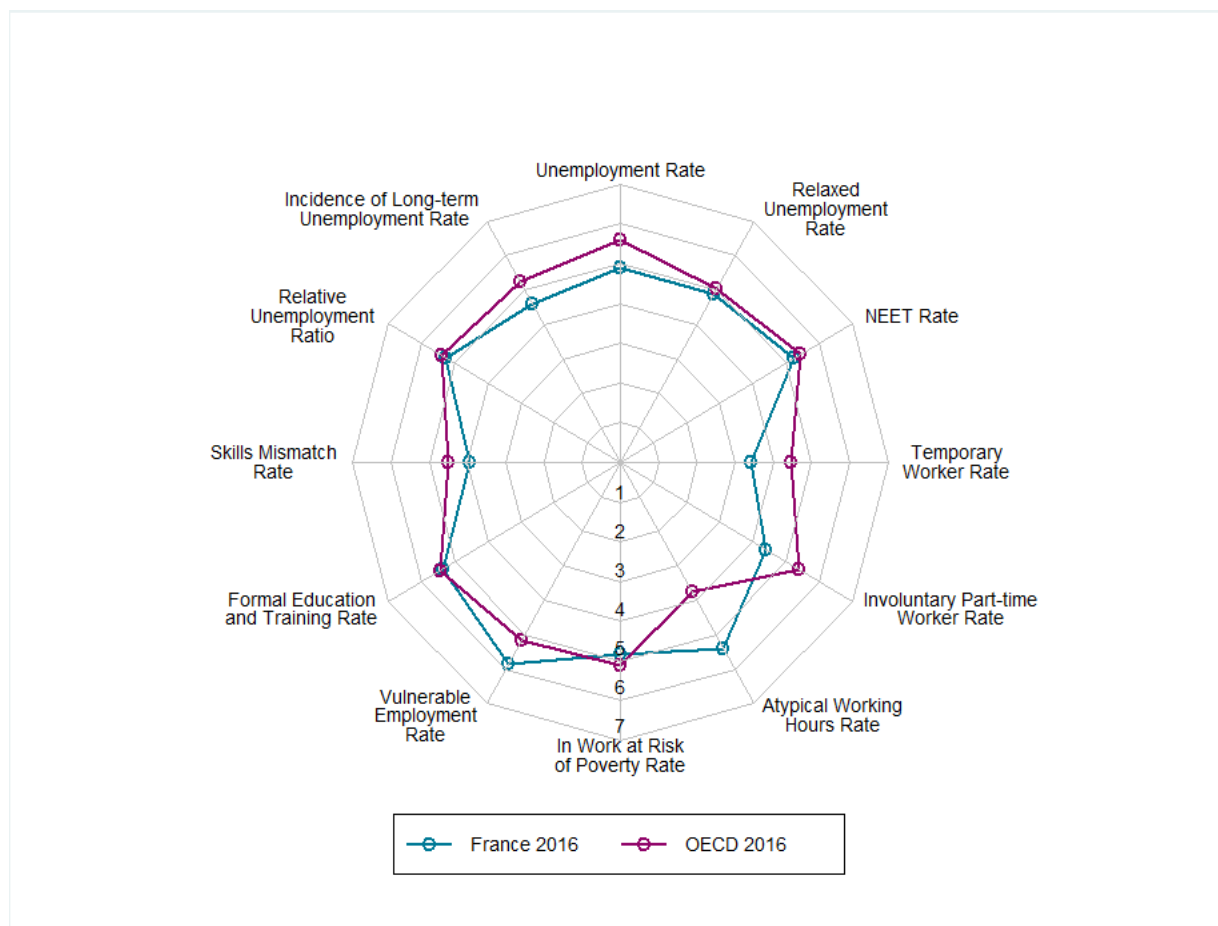
⁸ Those unemployed for more than one year (52 weeks) in the total number of unemployed (according to the ILO definition).

One of the major drawbacks of the KOF YLMI is data availability. When data is lacking, a category can occasionally be based on a single indicator or must be omitted entirely when not a single indicator for that category exists in a given country. A lack of indicators can make comparisons across certain countries or groups of countries problematic and sometimes even impossible.

1.2.3 The KOF Youth Labour Market Index (KOF YLMI) for France

In 2016, the French youth labour market scores at or below the OECD average for almost all indicators, as shown in Figure 2. Exceptions lie in the vulnerable employment rate and the atypical working hours rate. Apart from these two indicators, the French youth labour market stays behind the OECD average. The temporary worker and involuntary part-time worker rates in particular are considerably lower than the OECD average.

Figure 2: YLM Scoreboard: France versus OECD average, 2016

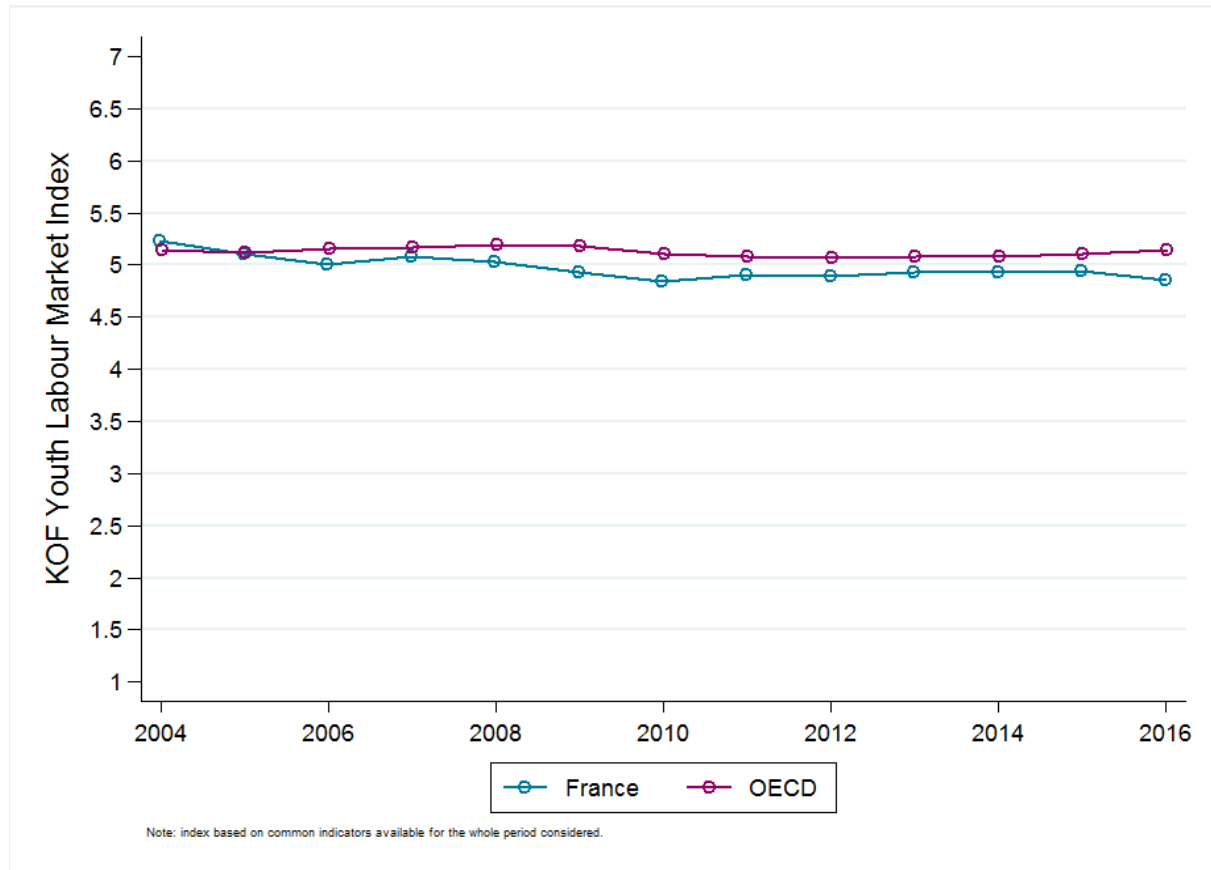


(KOF, 2018b).

Figure 3, illustrates the evolution of the aggregated KOF YLMI for France and the OECD average between 2004 and 2016. Due to missing values of the indicator “relaxed unemployment rate” in 2013, the evolution over time is plotted based only on the common

indicators (11 out of 12) available over the time-period 2004-2016. The figure shows that the French index decreased in the indicated time-period whereas the OECD average more or less remained stable. Except in 2004, France continuously had a lower YLM-Index than the OECD average.

Figure 3: YLM-Index: France vs OECD, 2004-2016



(KOF, 2018b).

1.3 The Political System

Understanding the basics of a country's political system and getting to know the political goals with respect to its education system are crucial points for the understanding of the education system in a broader sense. In the first part, we explain France's political system in general. The politics and goals regarding the education system will be referred to in the second part.

1.3.1 Overview of the French Political System

France is a constitutional republic, meaning that a constitution limits and divides the enumerated power of elected officials across various branches and levels. It is considered one of the birth places of modern governmental systems, although France itself has already fundamentally transformed its governmental system five times since the birth of the French

Republic in 1799. Since the last major constitutional change in 1958, the French parliament is made up of two chambers and has wide-ranging authority in holding the executive power accountable for its actions (Council of Ministers, 2018).

The executive branch (i.e. council of ministers) is appointed by the president, who himself is elected by absolute majority vote in two rounds. The president serves a five years term and is eligible to run for a second term. The two chambers of the parliament are the senate and the *Assemblée Nationale*. Departmental electoral colleges elect members of the senate indirectly and members of the *Assemblée Nationale* are elected by absolute majority vote in two rounds (Council of Ministers, 2018).

France is a leader among the European nations and plays an influential global role as a permanent member of the United Nations Security Council, NATO, and the G-7 (CCDCOE, 2018).

The Economist considers the French democracy to be a flawed democracy. In the Economist's Democracy Index 2015, France ranks 27th with an overall score of 7.92 out of 10 (Economist, 2016). France has the third lowest score of all EU-15 nations, above Portugal and Greece. The Economist regards a flawed political culture and a deficient functioning of the government as the reasons for the relatively low score (Economist, 2016). The Corruption Perceptions Index 2017 lists France as 23rd in the world with an overall score of 70. Being free of corruption is indicated by a score of 83 or above out of 100 (Transparency International, 2017). The Worldwide Governance Indicators 2017 rank France among the top decile of national governments, in "Government Effectiveness", "Rule of Law" and "Control of Corruption". However, they list France just among the top fifth in "Regulatory Quality" and "Accountability" and only in the top half concerning "Political Stability" (World Bank, 2017).

1.3.2 Politics and Goals of the Education System

The French Constitution states, "The Nation guarantees equal access for children and adults to instruction, vocational training and culture. The provision of free, public and secular education at all levels is a duty of the State." (French Consitution, 2018). The general interpretation of this amendment results in the five main pillars of the French education system: Academic Freedom, Free Provision, Neutrality, Secularity and Compulsory Attendance.

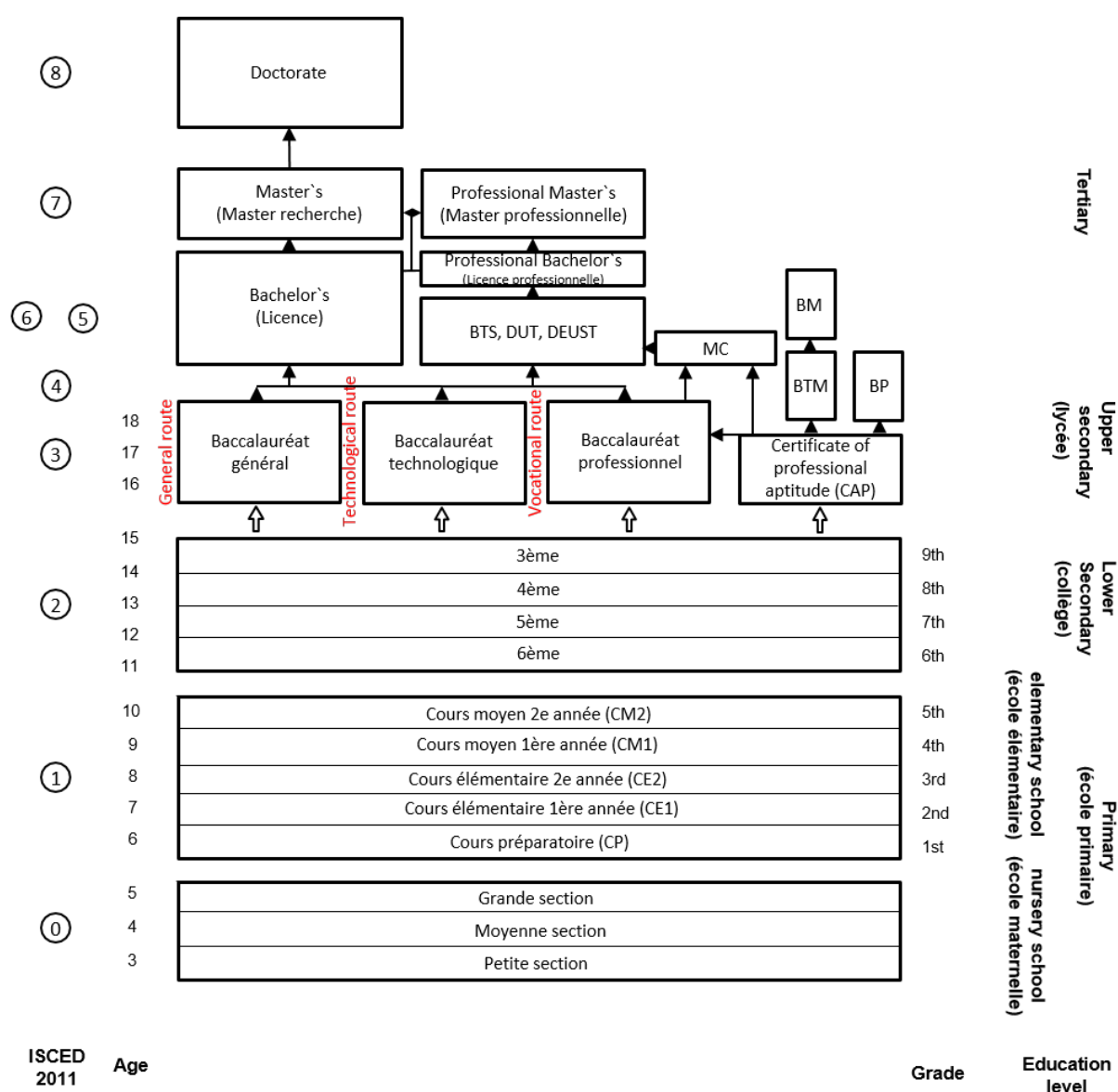
Public and private education providers coexist with the requirement of respecting the above-mentioned values. Generally, the public education is free of charge, also at the tertiary level. Education providers are required to respect philosophical, political and religious neutrality. Since the Jules Ferry Education Act of 28 March 1882, religious teaching is banned from the French public school system and children of all gender must attend schooling (Code de l'éducation, 2018).

As stated earlier in the report, France has a high youth unemployment. President Macron wants to tackle the high youth unemployment rate in France by matching the skills of young people better to the requirements of the job market. To do so, he wants to have a comparable apprenticeship programme to Germany. In theory, apprenticeships do already exist, however, according to Politico the bureaucratic effort of the existing apprenticeship programmes deter companies from taking part in them (Politico, 2017).

2. Formal System of Education

The French education system is divided into three levels: primary education, secondary education, and higher education (tertiary level) (Ministère de l'Éducation nationale, 2014). Primary education takes 5-8 years, secondary education 4-7 years (depending on degree type) and tertiary education 2-6 years (depending on specialization and degree) (Ministère de l'Éducation nationale, 2017). An illustration of the French education system with its various education paths is shown in Figure 4.

Figure 4: The French education system



Source: Own illustration.

Table 4 shows the gross enrolment rate (GER) for different educational levels, Table 5 the net enrolment rate (NER) and Table 6 the educational attainment for 2015 in percent. The NER quantifies the total number of students in the theoretical age group for a given education level enrolled at that level expressed as a percentage of the total population in that age group. The GER quantifies the number of students enrolled at a given education level—irrespective of their age— as a percentage of the official school-age population corresponding to the same level of education.⁹

France has a very high net enrolment in pre-primary education, as the government sees it as a fundamental part of the educational system. However, attendance is voluntary. Education in France is compulsory from the ages of 6 to 16. As expected for a developed country, the net enrolment rate for the compulsory school age is close to 100 percent. Although the net enrolment in lower secondary education is 95.3 percent, the lower secondary educational attainment of adults aged 25+ is just 82.6 percent. The same pattern can be observed for upper secondary education.

Table 4: Gross enrolment rate for different educational levels in France, 2015 (in %)

Educational level	ISCED 2011	Enrolment Rate
Pre-primary education	020	109.3
Primary education	1	107.4
Secondary education	2 – 3	111.1
<i>Lower secondary education</i>	2	108.67
<i>Upper secondary education</i>	3	114.34
Post-secondary non-tertiary education	4	2.2
Tertiary education	5 – 8	65.3

Source: (UNESCO, 2018).

Table 5: Net enrolment rate for different educational levels in France, 2015 (in %)

Educational level	ISCED 2011	Enrolment Rate
Pre-primary education	020	99.3
Primary education	1	98.9
Secondary education	2 – 3	
<i>Lower secondary education</i>	2	95.3
<i>Upper secondary education</i>	3	88.2
<i>Net enrolment rate of 15-24 year-olds enrolled in vocational secondary education</i>	2-3	13.8
Compulsory education age group	1-3	99.8

Source: (UNESCO, 2018).

⁹ For example, for the primary education level, the NER tells how many students in the typical primary school age are actually enrolled in primary school, while the GER sets the actual number of students in primary education—irrespective of their age—in relation to those who are in the official age to attend primary education.

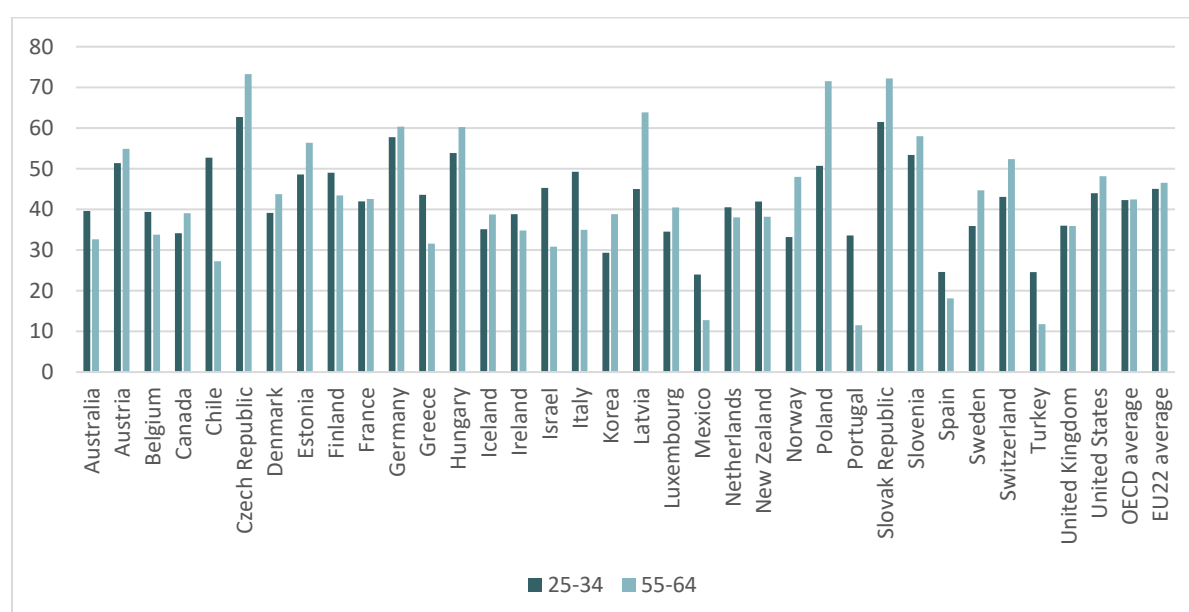
Table 6: Educational attainment for different educational levels, population 25+, 2015 (in %)

Educational level	ISCED 2011	Educational attainment
Pre-primary education	020	99.3
Primary education	1	97.5
Secondary education	2 – 3	
<i>Lower secondary education</i>	2	82.6
<i>Upper secondary education</i>	3	68.5
<i>Percentage of 15-24 year-olds enrolled in vocational secondary education</i>	2-3	13.8
Tertiary education	5 – 8	
<i>Short-cycle tertiary education</i>	5	28.5
<i>Bachelor or equivalent level</i>	6	16.4
<i>Master or equivalent level</i>	7	8.4
<i>Doctoral or equivalent level</i>	8	0.7

Source: (World Bank, 2018).

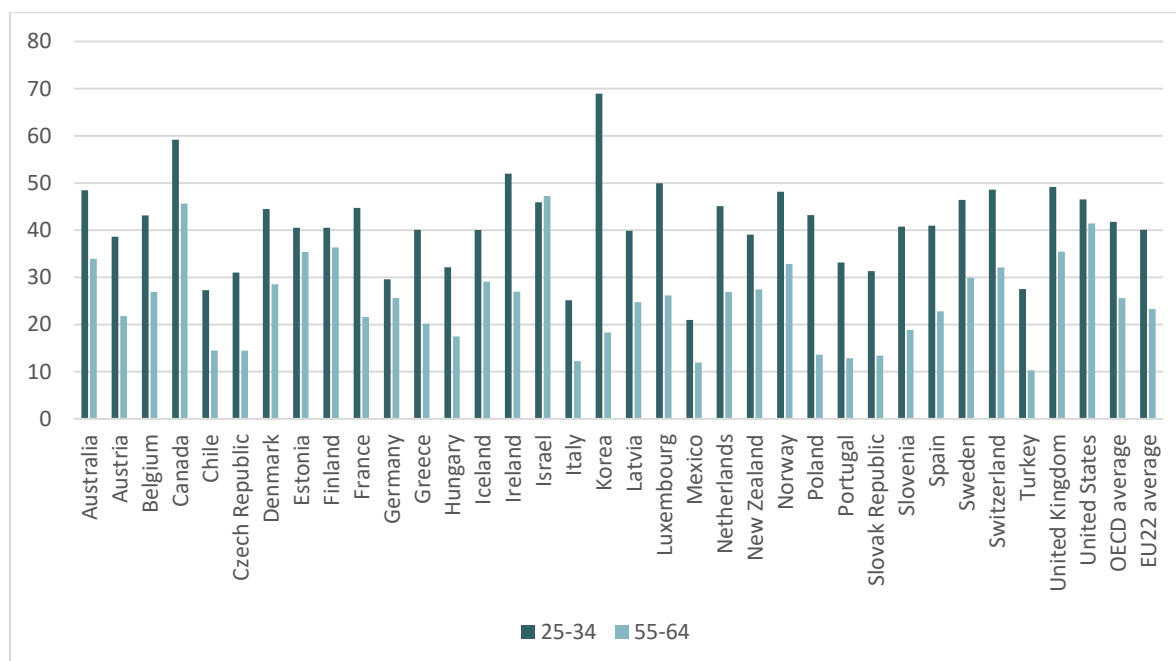
Figure 5 and Figure 6 show the educational attainment of various countries as well as the OECD and the EU22 average. France is very close to the OECD average in terms of share of population having attained upper secondary or post-secondary non-tertiary education. Compared to other European countries, France lies slightly below the EU22 average. In contrast, a higher percentage of the French population has attained tertiary education in comparison to OECD and EU22 average.

Figure 5: Percentage of population that has attained upper secondary or post-secondary non-tertiary education in OECD countries (2015)



Source: (OECD, 2016).

Figure 6: Percentage of population that has attained tertiary education in OECD countries (2015)



Source: (OECD, 2016).

2.1 Pre-Primary Education

Nursery school in France is provided by the state and is considered part of the French primary education system. Enrolment is optional but more than 90 percent of children aged three to six attend a governmental nursery school. Nursery schools offer three levels of pre-primary education according to the age of the pupils. Nursery schools follow the national curriculum for nursery education. Next to many fun activities, children learn reading, writing, numbering and the appropriate usage of language. The main purpose of the nursery education is to prepare the pupils for their entry into elementary school (Ministère de l'Éducation nationale, 2017).

Next to the state facilities, there are private childcare options offering similar education than the state nursery schools. Additionally, private facilities often offer services targeting children below three years of age. Thereby, private nursery schools have to follow the national curriculum like their state-owned competitors. However, private childcare institutions for children younger than three years are not considered as having any educational function. Therefore, these institutions are not obliged to follow any curricula and are free to operate as they want (Code de l'éducation, 2018).

2.2 Primary Education

French Primary education is divided into three skills cycles. Cycle 1 is the nursery school and therefore attendance is not compulsory (see Paragraph 2.1). Cycle 2 consists of the first three years (CP, CE1, and CE2) and cycle 3 consist of the two final years (CM1 and CM2) of elementary school (see Figure 4). Both cycle 2 and 3 are compulsory. The regular age for entering elementary school is six and the regular duration of elementary school is five years (Ministère de l'Éducation nationale, 2017).

Elementary education is provided in private and public institutions. Public primary education institutions have catchment areas and pupils are assigned to schools based on their home address. Exceptions are granted under certain conditions by the school inspectorate. In 2014, the share of pupils attending a private elementary school was 13.8 percent (Ministère de l'Éducation nationale, 2014). Private and public schools are obliged to follow the national curriculum mandated by the Ministry of National Education. Exceptions are only made if schools follow the national curriculum of another country (e.g. British, American or German schools) or if they do not receive any funding from the French government (Code de l'éducation, 2018).

Public elementary schools are entirely financed by the central government and by the municipal government of the respective region. The responsible authority is the Regional State Administrative Office for Education, which itself is subordinate to the Regional State Directorate for Education and the Ministry of National Education. Private institutions are either entirely or partly privately financed (in the latter case, they are partly financed by the French government). Normally, private schools collect yearly fees to finance their activities. If a private school receives funding from the government, they are obliged to follow additional requirements for partly publicly financed private institutions and they need to follow the national curriculum. This is the case for most French private institutions and only a few operate completely independently (FrenchEntree, 2016; Eurydice, 2016).

2.3 Lower Secondary Education

Lower-secondary education (*collège*) is compulsory in France. Normally, pupils enter lower-secondary education at age eleven. The duration of the programme is four years and consists of four grades numbered in descending order (*sixième - cinquième - quatrième – troisième*) (Ministère de l'Éducation nationale, 2017).

Generally, the organisation is very similar to the elementary schools. Public and private schools coexist, public schools have catchment areas and the Ministry of National Education mandates the curriculum on a national level. Different to primary education, 25.3 percent of the pupils

attended a private school at the lower secondary educational level in 2014 (Ministère de l'Éducation nationale, 2014).

There is a national final school examination at the end of compulsory schooling. Pupils who pass the examination earn the *Diplôme National du Brevet (DNB)*. Pupils who fail the examination receive a school-leaving certificate the *Certificat de Formation Générale (CFG)*. However, admission to upper secondary level is not only conditional upon success in the national final examination. Access to lycée is granted to all pupils who have a DNB and to a limited number of pupils with CFG (Eurydice, 2016).

2.4 Upper Secondary Education

Upper secondary education provides three educational paths: a general, a technological (*Lycée général et technologique*) and a vocational path (*Lycée professionnel or Centre de formation d'apprentis*). Generally, all paths grant access to tertiary education (Eurydice, 2017).

The head of the responsible lower secondary educational institution decides which educational path a student must take. The decision can be appealed to a committee chaired by an academic inspector. After the decision has been fixed, students are directed to the respective institution of their school district, unless the chosen option requires enrolment in an institution in another school district (WENR, 2015). Students are free to apply for admission in any private upper secondary institution, independent of the decision made by the head of the lower secondary institution. In 2014, 39.9 percent of students in the academic path and 41.6 percent of the students in the vocational path attended a private institution (Eurydice, 2016), (Ministère de l'Éducation nationale, 2017).

2.4.1 General and Technological Path

To gain access to the general or technological path students need to enter a *lycée général et technologique*. At the end of the first year, students need to decide between the general and the technological path. The general path is further divided into three streams: literary, economic and social sciences, and science. The literary stream focuses on languages, arts and literature. The science stream focuses on natural sciences and mathematics, and the economic and social science stream focus on economics, social sciences, history and geography. The technology path has programmes available in industrial science and technology, laboratory sciences, health sciences, and environmental science (Eurydice, 2018; Ministère de l'Éducation nationale, 2017).

The duration of both paths is three years and students need to take a final exam to earn either the *diplôme du baccalauréat general* or the *diplôme du baccalauréat technologique*. These diplomas grant access to higher education (Eurydice, 2018).

2.4.2 Vocational Path

The vocational path is taught in professional *lycées* and has over 70 different specialties, e.g. sales, hotel and tourism, management, accounting, automotive mechanics and graphic design (Eurydice, 2018). Succeeding in the final exam of the three-year programme earns the *baccalauréat professionnel*. The *baccalauréat professionnel* allows students to enter the labour market directly and also grants access to higher education. Most professional *lycées* offer a two-year vocational programme that earns the *Certificat d'Aptitude Professionnelle* (CAP). CAP is a terminal degree intended to give the students access to jobs in their chosen industry. The CAP programme does not grant access to tertiary education, however, students have the possibility to enter an intermediary programme that grants access to tertiary education. The CAP is an option for students who did not receive the *Diplôme National du Brevet* and therefore do not have a guaranteed study place at a *lycée* (Eurydice, 2016; Ministère de l'Éducation nationale, 2017).

2.5 Postsecondary/Higher Education

French higher educational degrees are organised around the European Bologna system (bachelor-master-doctorate; French: licence-master-doctorate). Similar to upper secondary education, tertiary education has an academic-research oriented path and a professional-practical oriented path. Academic programmes are generally taught in universities and professional programmes in major public institutions (*grands établissements publics*), public higher institutions (*grandes écoles*), administrative public institutions or private higher institutions. However, it is not always possible to make a clear separation, as non-universities in France also engage in research activities and offer academic programmes. For example, the *école polytechnique* Paris is one of the most respected French research institutions but technically is not considered a university. Generally, *grand écoles* like the *école polytechnique* Paris are the most renowned institutions for higher education in France. Only 12 percent of its graduates are without a job one year after graduation compared to 25 percent of graduates coming from universities (University Paris-Saclay, 2018; Eurydice, 2017).

Even though students with a *diplôme du baccalauréat general* or *diplôme du baccalauréat technologique* mostly enter the academic path and students with a *baccalauréat professionnel* the professional path, they are free to join the other path as well. In general, the French higher

education system is very flexible and students can switch between institutions and degrees as long they fulfil the respective admission requirements.

In 2012, 53.4 percent of *baccalauréat général* graduates enrolled in an academic programme and 32.2 percent enrolled in vocational courses, 40.8 percent of *baccalauréat technologique* graduates enrolled in an academic programme and 55.6 percent enrolled in professional courses, 54 percent of *baccalauréat professionnel* graduates chose to leave education after graduation, 30 percent entered a professional programme and 11.3 percent enrolled in an academic programme (Eurydice, 2018; Ministère de l'Éducation nationale, 2014).

A *baccalauréat diploma* is sufficient for being admitted to higher education. However, many programmes have limited numbers of study places and therefore, they usually have a tougher selection process (EuroEducation, 2014).

2.6 Continuing Education (Adult Education)

Next to various private and public adult education services on the regional level, France has two national networks of public adult education called GRETA (*Groupements d'établissements*) and AFPA (*Association nationale pour la formation professionnelle des adultes*). GRETA offers multiple education and training opportunities, however, specific offers depend on the resources of the responsible municipality and therefore vary between regions. GRETA targets adults interested in learning new skills or advancing existing ones, but not specifically in a professional context. In contrast, AFPA targets unemployed adults, adults looking for new career paths and adults looking for specific training in context of their profession. Registered unemployed French adults are normally guided to AFPA by the French unemployment agency (Ministère de l'Éducation Nationale, 2018a).

2.7 Teacher Education

Since 2011, teacher candidates have needed a master degree in the respective subject in order to enter the competitive exam for teaching. In order to become a teacher at the primary level, candidates need to successfully pass the primary teacher recruitment competition (CRPE) organised on a regional level. At secondary level, there are multiple national competitive exams depending on the subject and on whether the candidate wants to teach at lower secondary or at upper secondary level. At the primary and secondary levels, successful candidates become trainee teachers for one year. If the assessment of their training is positive, they are awarded permanent status (Ministère de l'Éducation nationale, 2017).

3. The System of Vocational and Professional Education and Training

This section of the Factbook describes the vocational education and training (VET) system at the upper secondary level and the professional education and training system (PET) at the tertiary level in more detail. Thereby, the term vocational and professional education and training (VPET) refers to both, the VET and the PET system.

Table 7: Summary statistics of the French VET system

VET pathway enrolment share out of all upper secondary (%)	41.5
Apprenticeship programme enrolment share out of all VET pathway (%)	42.9
Number of curricula/qualifications	200
Ø Share of time spent in workplace (vs. classroom)	60 - 75 %
Work contract (Yes/No)	Yes
Ø Share of vocation-specific content (vs. general) in classroom education	30 %
Classroom/workplace sequencing (Alternating, Sequentially)	Alternating
Frequency of workplace learning (Annually, Semi-annually, quarterly, monthly, weekly)	Weekly
Programme duration (Years)	2 – 4 depending on degree
Involved Actors	Local government National government Apprenticeship Training Centre Companies

(Eurostat, 2015).

3.1 Vocational Education and Training (VET; Upper Secondary Education Level)

This chapter outlines the upper secondary education level of the French VET-system in detail. After lower secondary education, pupils who are interested in the vocational route have the possibility to work towards a *Certificat d'Aptitude Professionnelle* (CAP), which lasts two years, or towards a *Baccalauréat Professionnel*, which lasts three years. The CAP and the *Baccalauréat Professionnel* are professionally qualifying diplomas that allow entrance to the respective field of work without further studying. There are over 200 specialisations in the CAP programme and 70 specialisations in the *Baccalauréat Professionnel*. While the *Baccalauréat Professionnel* diploma directly grants access to higher education, holders of the CAP either have to obtain the *Baccalauréat Professionnel* or the *mention Complémentaire Diploma* (MC)

to gain access to tertiary education. Alternatively, holders of the CAP can work towards the *Brevet Technique des Métiers (BTM)* or the *Brevet Professionnel (BP)*. Both diplomas attest an additional degree of specialisation in the chosen profession. Additionally, the BTM grants access to post-secondary non-tertiary education (UNESCO, 2015).

3.1.1 The Certificat d'aptitude professionnelle (Vocational Training Certificate)

The *Certificat d'Aptitude Professionnelle (CAP)* is a professional skills certificate, which attests a first level of qualification and direct entrance to work. It can be obtained either in a professional lycée or as an on-the-job apprentice in an apprenticeship training centre, in French *centre de formation d'apprentis*. The CAP programme in lycées is more theoretical and less practical compared to the CAP programme in apprenticeship training centres. Both programmes are open to all students with a *Diplôme National du Brevet*, which is the diploma successful pupils receive at the end of lower secondary. Unsuccessful pupils receive the *Certificat de Formation Générale*. Pupils with a *Certificat de Formation Générale* wishing to enrol in a CAP in a lycée have to apply separately, but in general, have a relatively low chance of being admitted. In order to be admitted in an apprenticeship training centre, a *Certificat de Formation Générale* is sufficient. However, in that case, pupils have to find a company that hires them as apprentices for the practical part of the programme. In 2014, 670'300 pupils were registered in a CAP programme. Thereby, the share of pupils registered in an apprenticeship training centre was 42.9 percent (Ministère de l'Éducation nationale, 2014).

a) Professional lycées

The CAP programme at the *lycée professionnel* includes general academic subjects, theoretical and practical, job-specific subjects, project activities and periods of on-the-job training. The academic subjects include literature, history, geography, mathematics and natural sciences. The theoretical and practical vocational courses transmit skills and knowledge required in the respective job. Project activities can be separated into work-specific activities and general project activities. The work-specific activities focus more on the content and the general activities more on the method. The majority of the curricular time dedicated to training typically consist of periods in the training company with a duration of 12 to 16 weeks, depending on the specialism of the CAP-Programme. Obtaining the *Certificat d'Aptitude Professionnelle*, requires 2300 hours of practical training. However, only 420 to 560 hours (12 to 16 weeks) need to be work based (UNESCO, 2015).

b) Centre de formation d'apprentis (apprenticeship training centre)

The CAP programme in apprenticeship training centres combines on the job training with a company and theoretical courses at the apprenticeship training centre. Thereby, apprentices have an employment contract and receive a salary. Apprenticeship supervisors teach the apprentices theoretical and practical knowledge and assists the apprentices in their personal development. They spend roughly 60 percent of their time in the workplace, the rest in school. Two thirds of the school-based training is dedicated to general academic knowledge and one third to work specific knowledge and practical training (UNESCO, 2015).

3.1.2 The Baccalauréat Professionnel (Vocational Baccalaureate)

The *Baccalauréat Professionnel* is typically obtained in professional *lycées*. However, for most professions, it is also possible to obtain it as an apprentice in an apprenticeship training centre. To obtain the *Baccalauréat Professionnel*, apprentices must have successfully obtained either the CAP or the *Brevet d'Études Professionnelles (BEP)*. The BEP is an intermediary diploma. All students who have completed the first two years of a *Baccalauréat Professionnel* programme in a *lycée* receive the BEP. The BAC programme offered in professional lycées consists of 3500 hours of practical training. Thereby, 770 hours (22 weeks) of the practical training need to be completed in a company. 60 percent of the BAC programme as offered in an apprenticeship training centre is company-based. The remaining time is spent at the apprenticeship training centre. (Ministère de l'Éducation nationale, 2010; Ministère de l'Éducation nationale, 2017; UNESCO, 2015).

3.1.3 Brevet Professionnel

The *Brevet Professionnel (BP)* is an occupation-specific vocational certificate that is supposed to attest its holder an additional level of specialisation and competence. The *Brevet Professionnel* can only be obtained as an apprentice in an apprenticeship training centre. Therefore, candidates need a valid apprenticeship contract. In addition, candidates need a CAP diploma for being admitted to the BP programme. The duration of the programme is two years and contains 400 hours of theoretical courses. The remaining time is spent as an on-the-job apprentice in a company. There are five domains with 90 different specialisations available in the BP. The five domains are Agriculture and Environment, Beauty, Commerce and Management, Tourism, and Sport and Animation. At the end of the two years programme, students have to pass a final exam that consists of practical and theoretical examinations (Ministère de l'Éducation Nationale, 2016).

3.1.4 Brevet Technique des Métiers

The *Brevet Technique des Metiers* is a vocational certificate that is supposed to attest its holder a high degree of competence and professionalism. The programme aims to transmit job-specific knowledge as well as management capabilities. There are twelve different focus areas available. To obtain the degree, candidates need to complete five modules within two years in one of the focus areas. The five modules are production, innovation and commercialisation, fabrication, organisation of work, and team motivation. At the end of the two years, students need to pass a final exam to receive the diploma. Like the *Brevet Professionnel*, the *Brevet Technique des Metiers* is exclusively offered in apprenticeship training centres. To enter the programme, a CAP diploma and an apprentice contract are required. The *Brevet Technique des Metiers* grants access to the brevet de maîtrise (Ministère de l'Éducation nationale, 2014; UNESCO, 2015).

3.2 Professional Education and Training (PET; Post-Secondary Level)

3.2.1 Brevet de maîtrise

The *Brevet de Maîtrise* is an advanced vocational degree that qualifies its holder to open a business himself, to mentor apprentices, and to take on responsible positions within the respective field of work. The focus of the programme lies in work-specific business administration. The duration of the programme is three years. Typically, students enrol on a part-time basis, in addition to regular work. The programme consists of six modules with a total duration of 331 hours. The *Brevet Technique des Metiers* in the respective field of work is a requirement for being admitted to the programme. In addition, at least one year of work experience is required to take the final exams. The available specialisations are organised in six groups, namely, food related professions, fashion, health and hygiene related professions, mechanical professions, construction and housing professions, communication, multimedia and entertainment professions, and diverse professions. Within these groups, there are 68 different specialisations available, however, the bulk of them are either mechanical or construction professions. A comparable degree to the *Brevet de Maîtrise* would be the German “Meister” (Chambres de Métiers et de l'Artisan, 2018).

3.2.2 Brevet de technicien supérieur

The *Brevet de Technicien Supérieur (BTS)* is an advanced technician's diploma, offered in advanced technician sections (STS) in over 2000 public and private lycées. The specialisations of the two-year programme are broken down into different domains: art, food processing, mechanics, chemistry, electronics, electricity, and business. The programmes mostly consist

of lectures, but also involve practical training sessions in cooperation with businesses. In addition, BTS candidates have to spend 14 to 18 weeks in internships. In 2007, the BTS was integrated into the framework of European higher education. By passing the diploma, students earn 120 ECTS credits that may be used towards obtaining the *licence* (bachelor degree). Automatic admission is granted to holders of the *Baccalauréat Technologique* diploma in the same professional field as the BTS in which the student has graduated. Otherwise, students have to apply formally, in which case admission depends on their past educational performance and their respective fit to the programme. The BTS is a professional qualifying degree and roughly 70 percent of the students start work directly after graduating. Alternatively, students have the possibility to obtain a professional bachelor degree after one additional year of study (Ministère de l'Enseignement supérieur, de la Recherche et de l'innovation, 2013; EuroEducation, 2014).

3.2.3 Diplôme Universitaire de Technologie

The *Diplôme Universitaire de Technologie* (DUT) is a two year programme offered at technological university institutes (IUT). The DUT follows the framework of European higher education and it takes 120 credits to obtain the degree. Access to IUT is very selective and candidates have to go through a tough assessment process. Admission is granted based on past educational performance, a written application dossier, and in some institutes, an interview. A minimum requirement for being admitted is having a *baccalauréat* degree. The DUT is a professional qualifying degree, meaning that it is possible to enter work in the role of the respective profession after graduation. However, more than 80 percent of the students enter a bachelor programme after graduation (Ministère de l'Enseignement supérieur, de la Recherche et de l'innovation, 2018; EuroEducation, 2014).

3.2.4 Professional Bachelor

The *Professional Licence* (professional bachelor degree) is a professional degree satisfying requirements of the framework of European higher education. The one-year course is open to students coming from STS, IUT or from the second year of a general bachelor programme. The entry requirement is having obtained the DUT, BTS, or successfully completed the first two years of a general bachelor degree. The programmes consist of compulsory teaching units depending on the subject and optional teaching units chosen freely by the students. In addition, the programme includes applied projects and at least one period of work based training. The law on equal opportunities limits the length of work placements to six months and makes remuneration compulsory for work based training periods, which are longer than two months. With the bachelor degree, students can enter directly into master degrees in the same field of study or into any master after completing additional required courses (EuroEducation, 2014).

3.2.5 Professional Master

Professional master degrees further specialize students in a particular profession. In order to enrol in a master's programme, students require a bachelor degree in a related field or they need to fulfil additional requirements if they apply from another field. Normally, the master's degree is awarded after obtaining 120 ECTS, which corresponds to two years of study. In addition to theoretical and practical training completing a research project is required for obtaining the master's degree (EuroEducation, 2014).

3.3 Regulatory and Institutional Framework of the VPET System

3.3.1 Central Elements of VPET Legislation

The national government plays a key role in the governance of the education system. It is in charge of education policies and of recruitment, training and remuneration of teaching staff, and funding of educational activities. The legal fundament for these activities is the *Code De Éducation* (educational code). It includes all legislative and regulatory provisions relating to French primary, secondary and higher education in a single document. It defines all general principles and incorporates administration, teaching, and personnel legislations (Eurydice, 2018).

The *Code De Éducation* also regulates vocational education. Specifically, the “law 2009-1437 lifelong guidance and training” guarantees the right for vocational education and training and defines the apprenticeship supervision and remuneration. The “law 2004-391 Vocational training throughout life and social dialogue” defines the role of companies to participate in vocational training programmes. Additional labour rights concerning apprenticeships are outlined by the French *Code du Travail* (Cedefop, 2012; Ministère de l'Enseignement supérieur, de la Recherche et de l'innovation, 2018).

3.3.2 Key Actors

Various agents contribute to the French VPET System. All relevant actors are briefly described in the following.

a) Vocational Education and Training

Government

The Ministry of National Education and the Ministry of Higher Education, Research and Innovation are the main two bodies for developing and awarding vocational qualifications. However, for some professions, other ministries as the Ministry of Agriculture, Social Affairs

and Health are responsible for the process of developing and/or awarding the qualifications (Eurydice, 2018; Cedefop, 2012).

Public agriculture education offers a variety of agricultural technological or vocational courses in upper secondary and tertiary education. At the secondary level, the Ministry of Agriculture is responsible for the CAP and *Brevet Professionnelle* programmes focusing on agricultural education. Thereby, the Ministry of Agriculture designs the curricula but orientates itself at the general framework defined by the Ministry of National Education. In addition, it issues the corresponding vocational certificate named CAPA (*Certificat d'Aptitude Professionnel Agricole*) respectively BEPA (*Brevet d'Études Professionnelles Agricoles*). The programmes are offered in agricultural apprenticeship training centres. The Ministry of Social Affairs awards various vocational and professional qualifications in the social sector. However, the Ministry of National Education is responsible for educational programmes leading to these qualifications. The Ministry of Health awards the degrees for ambulance drivers, for childcare assistants and for assistant nurses. The courses for these qualifications follow the general apprenticeship scheme and are taught in training institutes focusing on health related education (Cedefop, 2012).

Representation and advisory bodies

The *Commission National de la Certification Professionnelle* (CNCP) is an inter-ministerial commission under the authority of the Minister responsible for vocational training. It is composed of members of the ministries, representatives of the regions, and of representatives of companies and unions. The commissioners are appointed by the prime minister and serve for a period of five years. The commission identifies the supply of vocational qualifications, processes applications, updates the *Répertoire National des Certifications Professionnelles* (RNCP, National Repertory of Vocational Certifications), monitors and adapts existing qualifications, and makes recommendations to the institutions developing certifications (CNCP, 2018).

The *Conseil National de l'Emploi, de la Formation et de l'Orientation Professionnelle* (CNEFOP) is the central advising body for vocational and professional training and education in France. Established in 2014, the CNEFOP was introduced as a replacement for the *Conseil National de la Formation Professionnelle Tout au Long de la Vie* (CNFPTLV) and the *Conseil National de l'Emploi* (CNE). The main goal of the CNEFOP is to ensure a fit between labour market requirements and the VPET system. Its main duties are promoting cooperation among the stakeholders, advising on legislation and regulation, assessing regional policies for apprenticeships, and reporting to the parliament on the state of the VPET system. It consists of representatives of the national government, regional governments, employers, experts, and other organisations (i.e. GRETA and private organisations) (CNEFOP, 2018).

The *Commission Paritaire Nationale de l'Emploi et de la Formation* (CPNEF) is a commission created by employers and unions consisting of two representatives of each participating union and of representatives of employers from various branches. The commission sees its main duties in ensuring a steady supply of adequately trained workers, by analysing the labour market and the VPET system, by advising regulation bodies on VPET legislation and by developing new professional qualifications. Its focus is strictly on vocationally or professionally oriented qualifications with a direct link to the labour market (CPNEF, 2018).

Next to these two bodies on a national level, there are multiple committees on a regional level. The *Comités régional de l'emploi, de la Formation et de l'orientation professionnelle* (CREFOP) are active in all regions of France. They fulfil a similar role on the regional level as the CNEFOP does on a national level. In other words, the committees try to ensure that regional interests are included in the regional VPET legislation. On the national level, the CREFOP fosters an interregional cooperation in terms of VPET policies (CREFOP, 2018).

Education and training providers

Vocational education and training is delivered in 1500 apprenticeship training centres and 1700 professional *lycées*. In 2016, 665'200 students were enrolled in professional *lycées* and 410'500 in apprenticeship training centres. The professional *lycées* and the apprenticeship units are generally under the custody of the Ministry of National Education. Exemptions are agricultural institutions, which are controlled by the Ministry of Agriculture. Creating a professional *lycée* respectively an apprenticeship training centre is subject to many agreements between the creator (local authorities or private education providers), the Chamber of Commerce, and the Ministry of National Education respectively Agriculture. This ensures a relatively tight governmental control over public and private vocational institutions (Eurydice, 2018).

b) Professional Education and Training

Government

The Ministry of Higher Education, Research and Innovation is the main body for developing and awarding professional qualifications. However, as for VET, other ministries are responsible for the process of developing and/or awarding the qualifications for some professions (Cedefop, 2012).

At the tertiary level, the Ministry of Agriculture is responsible for designing and awarding the BTSA (*Brevet de Technicien Supérieur Agricole, BETSA*). The BTSA is offered in public and private agricultural *lycées*. In addition, it is in control of professional bachelor programmes focusing on agricultural topics. However, the institutions offering these bachelor programmes are designing the courses and the Ministry of Agriculture serves more as a control unit. For the

role of the Ministry of Social Affairs in the PET System please refer to a) Vocational Education and Training. Finally, the Ministry of Health designs and awards the qualifications for physiotherapists and nurses and the Ministry of Culture the professional bachelor programmes for architecture, arts, music, dance and theatre (Cedefop, 2012; Eurydice, 2018).

Representation and advisory bodies

In general, French legislation does not clearly separate the VET and the PET System. Therefore, advisory bodies are generally concerned with the VPET System as a whole. Please refer to Chapter 3.3.2 a) for a selection of the most important VPET advisory bodies.

Other than the above mentioned institutions, the *Conseil National de l'enseignement Supérieur et de la Recherche* (CNESER) is not concerned with VET. It advises the Ministry of Higher Education, Research and Innovation on guidelines concerning higher education including professional education. It is made up of representatives of higher education institutions, students and of the government. The CNESER is mainly concerned with monitoring and reforming the higher education system in general, monitoring and reporting the quality of professional training infrastructure and the distribution of endowments between the institutions (Cedefop, 2012).

Education and training providers

In general, the course structure of PET orientates itself at the European Credit Transfer System (ECTS). PET, leading to BTS and DUT degrees, is delivered in the advanced technician sections (STS) of public and private *lycées*, in *Instituts Universitaires de Technologie* (IUT), and in *Instituts Universitaires Professionnalisés* (IUP). After completing these programmes, students may earn a professional bachelor's degree. In that case, the one-year programme leading to a professional bachelor's degree has to be earned in a university. The professional master's degrees are also offered by universities (Cedefop, 2012).

3.4 Educational Finance of the VPET System

In France, the national government is responsible for almost all central expenditures on education. However, local authorities are responsible for financing expenditures related to school operation (i.e. technical personnel, running costs, equipment etc.) and the private sector plays an important role in financing vocational education on upper secondary level (Eurydice, 2014).

3.4.1 Educational finance of the VET system

The three main beneficiaries of the money spent on VET are apprentices, the apprenticeship training centres, and companies hiring apprentices. The main contributors are the regional

governments, the national government, and the private sector. In 2012, the total spending on apprenticeships was 8.2 billion Euros. Apprenticeship training centres received 37 percent, apprentices 43 percent, and employers 20 percent of the expenditures. Thereby, 45 percent of the funding for apprenticeships came from companies, 24 percent from regional governments, and 24 percent from the national government. Other contributors were various organisations, the apprentices, their families, and the apprenticeship training centres themselves.

In 2012, salaries paid to apprentices directly accounted for 70 percent of the expenditures made by companies. The apprentice salary is derived as a percentage of the branch specific minimum wage. The amount depends largely on the apprenticeship contract. However, the lowest wage is 25 percent of the minimum wage. Typically, the wage increases corresponding to the productivity of the apprentice. The remaining 30 percent of the expenditures made by companies cover the apprenticeship taxes, direct payments to apprenticeship training centres, and other training related costs. The expenditures made by the regional governments finance the school operation (i.e. technical personnel, running costs, equipment etc.) and compensations to employers of apprentices (550 million in 2012). The expenditures of the national government cover the expenditures on the teaching staff, new buildings and the social security cost of the apprentices. In addition, tax reductions are granted to employers of apprentices. Apprentices do not pay tuition fees and all school material is normally provided by the training centres. However, they may need to finance work equipment related expenditures themselves, depending on their profession and employer. In addition, they need to cover transportation and food costs. Apprenticeship training centres are allowed to contract out work done by apprentices during practical training. The revenues are used to finance parts of the apprenticeship training centre's operation (CNEFOP, 2015; European Commission, 2016; Eurydice, 2018).

3.4.2 Educational finance of the PET system

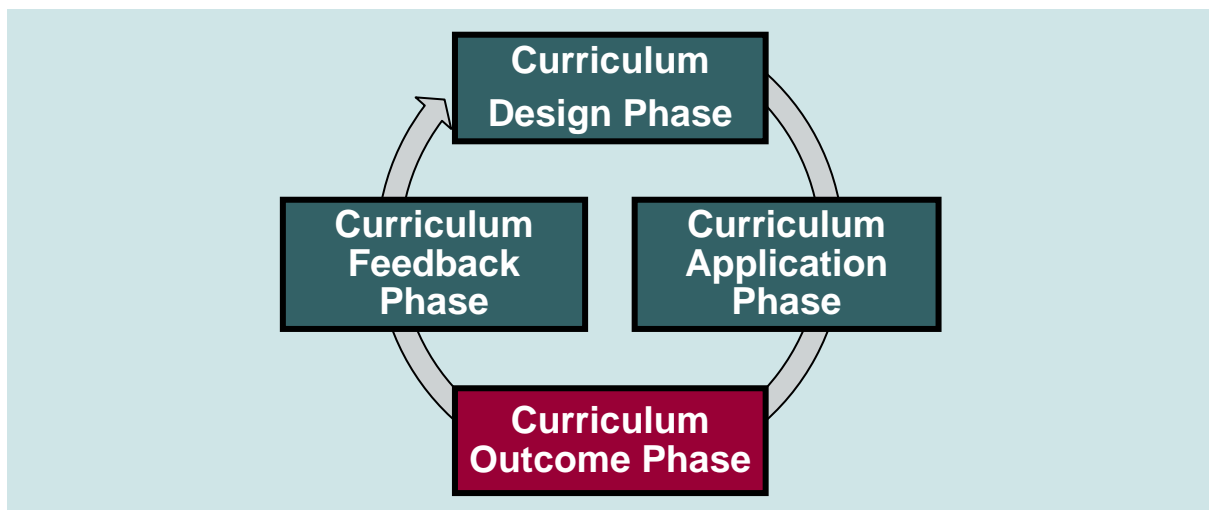
In 2007, higher education providers gained budget autonomy following the enactment of law no. 2007-1199. Therefore, higher education institutions can decide autonomously on the allocation of funds, which makes a detailed analysis of the share spent on professional education rather difficult. In 2014, 67.9 percent of public higher education has been financed by the state, 10.7 by regional governments, 9.5 percent by students, and 8.8 percent by companies. The state largely finances expenditures directly related to educational expenditures. The regions finance the school operations. Depending on the institution and the programme, students need to pay tuition fees. Unlike VET, PET in France is almost entirely school based and expenditures made by companies mainly cover cooperation projects with

schools and industrial placements of students (Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation, 2017; Eurydice, 2018).

3.5 Curriculum Development

The curriculum is a central element for the functioning of a VPET system by defining the framework and the (quality) standards for the education system. The development of a curriculum can be decomposed into a three-step process with a curriculum design, a curriculum application and a curriculum feedback phase. This theoretical concept is called the Curriculum Value Chain and is depicted in the picture below (CVC; for more details see (Renold, et al., 2016)).

Figure 7: Curriculum Value Chain (CVC)



Source: (Renold, et al., 2016)

In the curriculum design phase, VET curriculum content and qualification standards are decided upon by the relevant actors. Therefore, the discussion in the respective subchapter below focuses on the degree and the amount of stakeholder participation concerning curriculum design in France. The curriculum application phase revolves around the implementation of the curriculum. Because learning environments differ heavily across countries—especially with respect to the prevalence of workplace learning—the curriculum application phase subchapter in this Factbook focuses those learning environments. Specifically, it addresses where learning takes place and whether the curriculum dictates both school and workplace learning or only one of the two. Finally, curriculum outcomes can be collected and analysed in the curriculum feedback phase. This evaluation process is important as it may render a more refined curriculum design than was possible in the first place.

3.5.1 Curriculum Design Phase

The design phase is crucial for the whole curriculum process. In order to ensure that the skills taught in the VPET programmes correspond to the needs of the labour market, experts from companies should be involved in defining the qualification standards and learning contents of the curricula.

In France, representatives of the central government, educational institutions, the regions, and the private sector work together to design vocational and professional qualifications that fit the needs of the labour market. The State performs the function of developing standards and policies applicable in the field of vocational training. Regions have some competences in implementing the policies and adapt them to local conditions. In addition, they play an important role in continuously monitoring the labour market and filter out new requirements for vocational education. Finally, companies and unions also formulate their demands and engage in the design of qualifications. In the following, the curriculum design process is explained in more detail (Eurydice, 2018).

In an initial step, French ministries, regional authorities, training providers or the CPNEF propose qualifications according to their perception of the needs of the labour market. They define the qualifications in terms of required skills, knowledge and competences needed. In this step, they may follow the advice of the CNEFOP, CREFOP, or other interest groups. In the next step, the application for a new qualification is handed over to the CNCP, which evaluates the proposal, checks it on its coherence, complementarity, and overall quality. Eventually, the CNCP approves the qualification application and incorporates the new qualification into the RNCP. The qualifications define the national standard for a specific job and are therefore at the core of the French curriculum design process. After a qualification has been accepted by the CNCP, vocational consultative committees attached to the ministries responsible for establishing diplomas and certificates for vocational education and training design the curricula for the new qualification. Thereby, they make a proposal for programme duration, the ratio between school-based education and practical training and the academic content, within the existing educational legal framework. Afterwards, the responsible Ministry confirms the newly designed certificate and hands out guidelines to the training providers (CNCP, 2018; CNEFOP, 2018; CREFOP, 2018).

3.5.2 Curriculum Application Phase

The way in which a curriculum is implemented—especially with respect to learning environments—is important to achieve the intended learning outcome. As described in section 3.1.1, apprenticeship training centres and professional *lycées* are responsible for the school-based component of VET programmes and companies for the work-based component.

Thereby, the apprenticeship training centres respectively the professional *lycées* coordinate the training with the participating companies and take the lead in the curriculum application process. In contrast to VET, PET programmes are almost exclusively school-based. The only work-based component lies in internships, which are generally not affected by any curricula and are organised by companies almost independently from the PET programme (Eurydice, 2018).

3.5.3 Curriculum Feedback Phase

The curriculum feedback phase deals with the question, whether and how educational outcomes are analysed. Based on this, the curriculum could be re-worked and improved.

In France, the *Département du Contrôle de la Formation Professionnelle* (DCFP) is responsible for the quality assurance of vocational and professional education. It has the authority to exercise administrative and financial inspections of training providers, companies and other involved organisations. Its missions are ensuring that companies fulfil their obligations regarding vocational training and ensuring that the quality of the training provided by training providers is in compliance with national standards. In addition, the DCFP examines applications of new training providers and is responsible for quality assurance in adult education (DCFP, 2017).

The *Service Régional de Contrôle* (SRC) exercises an administrative and financial control on providers of vocational education and companies who hire apprentices on a regional level. Thereby, the SRC fulfils a similar role as the DCFP but with an emphasis on the operational rather the educational quality (SRC, 2018).

Next to the DCFP and the SRC, the *Direction de l'Animation de la Recherche, des Études et des Statistiques* (DARES, Research, Surveys and Statistics Development Department) compiles statistics and conducts studies to measure the effectiveness of vocational education policies next to other general economic research. The DARES plays an important role in gathering data and in informing legislators and the public about their findings (DARES, 2018).

3.6 Supplying Personnel for the VPET System (Teacher Education)

In France, the Ministry of National Education and the Ministry of Agriculture are responsible for the supply of teachers for the VPET System. Thereby, the system of recruitment for VPET teachers is the same as the general recruitment system. Candidates must hold at least a bachelor's degree in the respective subject and formation takes two years. After completing the first year, candidates have to pass a competitive examination in order to enter the second year and candidates have to absolve periods of practical training in the second year. At the

end of the second year, successful candidates are qualified as teachers. The recruitment takes place in *Instituts Universitaires de Formation des Maîtres* (IUFM) (Eurydice, 2018).

For candidates aiming to teach vocational subjects in an apprenticeship training centre (CFA), it is also possible to move into vocational education directly from the industry. Thereby, the requirements are defined by the chambers of commerce or trade and are adjusted to meet the needs of different sectors and regions (Cedefop, 2014; Eurydice, 2018).

Apprentices receive an apprentice master and one or more in-company mentors within their company. The master is responsible for providing the apprentice with the required practical training for a particular level of qualification. The master is also in exchange with the apprenticeship-training centre and overviews the apprentice's development. The requirements for becoming an apprentice master are at least three years of experience and a level of competence at least equivalent to the one towards which the apprentice is aiming.

In-company mentors are responsible to train the apprentices of a company. The mentor role has no official status and therefore does not have any formal requirements for qualification. Depending on internal organization of the company, the apprentice master might also fulfil a mentor role. Despite the absence of requirements, the Ministry for National Education strongly recommends companies, which are participating in apprenticeship programmes, to send their mentors to training courses. The mentor training is jointly financed by the national government and the regions (Cedefop, 2012; Cedefop, 2014; Eurydice, 2018).

4. Major Reforms in the Past and Challenges for the Future

4.1 Major reforms

In May 2017, the new government around President Macron announced far-reaching reforms of the vocational education system. The reforms come in line with large-scale reforms of the labour market, the social system, and the school system. The aim of the reforms is to make France more competitive and address challenges stemming from digital and ecological transitions. In addition, the reforms aim to help job seekers and unqualified workers acquiring the skills needed to find a job. The reforms are designed and implemented in close cooperation with the professional sectors and regions. The French government has devoted a total of EUR 57 billion for all reforms together over the next five years. Of this sum, EUR 15 billion are devoted to reforming the vocational education and training system (Cedefop, 2018a).

The existing apprenticeship system is going to be redesigned under the leadership of the Ministry of Labour as part of a broader reform of the French social model. This potentially includes changes of the labour law and of the social insurance system. In addition, the reform aims to create new vocational programmes at the upper secondary level. Thereby, the aim is mainly to increase the number of training places offered by companies. In addition, the French government wants to improve the communication about the vocational programmes and aims to increase the social status of apprenticeship schemes. To increase the number of training places, the new government wants to develop a one-stop shop for companies to register apprenticeship contracts. In addition, the government aims for more flexible apprenticeship contracts with adjustable durations. Furthermore, they want to make subsidies more transparent and converge different forms of apprenticeship contracts into one simple-to-understand document. Instead of fixed hiring periods, hiring apprentices will be possible throughout the entire year and generally much less restricted. To increase the attractiveness of apprenticeships, the new government aims to offer the apprenticeship scheme in professional *lycées* in combination with the CAP and the BAC; increase all apprentice net salaries by Euro 30; increase the maximum legal starting age of apprentices from 26 to 30 years; ease the access to the Erasmus apprenticeship programme; and facilitate the integration of apprentices into companies with new guidelines. In addition, they want to introduce three-year professional licenses (professional bachelors) instead of the existing one-year programmes. By doing so, the government hopes to ease the transition from upper secondary to higher education and to make more transparent what career opportunities exist in vocational education. To increase the visibility of the apprentice scheme the government plans to conduct several information days at the lower secondary level. Finally, the government

plans to fight any discrimination in the recruitment of apprentices by introducing diversity criteria (En-Marche, 2017; Ministère de l'Éducation Nationale, 2018b).

The planned changes in the continued vocational training system focus on redesigning the structure of training, redesigning the access to training, redesigning the funding mechanism, developing new work-based training schemes, and introducing a better regulating mechanism.

Since 2015, job seekers and employed have a personal training account (*CPF, Compte Personnel de Formation*) that grants them the individual right to training. Instead of granting training hours, the government wants to hand out points, which could be converted into euros. The funding is planned to come from enterprise contributions to training. The aim is to strengthen the training rights of individuals and to ease the access to the training market. This should help individuals to improve their employability and career prospects. In addition, the government wants to merge several existing quality reference frameworks into a quality certification system applicable to all training bodies (Cedefop, 2018a; Cedefop, 2018b).

4.2 Major challenges

Since 2013, France has undertaken various reforms affecting all levels of education and training. However, the European Union criticizes that the outcomes are average in comparison to other countries. In addition, the European Union is concerned about a widening of educational inequalities linked to the socio-economic status. The number of apprenticeships has increased over the last years, but the EU regards the progress as insufficient. In particular, the number of apprenticeships for the least qualified is too low. Finally, the European Union criticizes the regional and social differences in access to the education and training system. Many young people, often with an immigrant background, leave education with at most a lower secondary level diploma. According to the EU, the labour market prospects of this group are still very low and have even decreased over the past years. Reports confirm that immigrant pupils have a higher risk to be oriented towards vocational pathways, which are socially less valued. Because of the socially lower graded qualifications, immigrant pupils experience more difficulties in the transition from education to work. As France's proportion of the population with an immigrant background is 25 percent, this concerns a large share of the population (European Commission, 2016).

The initial phase of a new 'Priority Education' plan targeting schools in disadvantaged areas started in September 2014. The objective is to reduce to less than 10% the differences in basic skills attainment between such areas and the average. The plan, which should be fully implemented in 2016 or 2017, is organised around 14 key measures under three strands: 1) revision of the 'priority education' map and networks; 2) stronger support for improved pupil learning; 3) pedagogical reform with collaborative teaching, appropriate pedagogical

approaches and stable team. Teachers will also benefit from financial incentives. The success of the plan will among other things depend on the effective implementation of the pedagogical reform, appropriate training as well as the capacity to attract and retain experienced teachers and headmasters (European Commission, 2016).

In the last decade, participation of upper secondary students in vocational education and training remained below the EU average (43 percent compared with 48.9 percent in 2013). Also, the number of students in VET education is growing, but the number of pupils in apprenticeships decreased over the last decade. In 2008, 300'000 new apprenticeship contracts were signed compared to 273'000 in 2013 and 265'000 in 2014 (Ministère du travail, 2015). In 2016, 288'000 new contracts were signed, which may indicate a slight recovery (Ministère du travail, 2017).

References

- CCDCOE. (2018). NATO Cooperative Cyber Defence Center of Excellence. Retrieved from <https://ccdcoe.org/g7.html>
- Cedefop. (2012). *France VET in Europe – Country Report*. European Centre for the Development of Vocational Training.
- Cedefop. (2014). *Apprenticeship-type schemes and structured work-based learning programmes*. European Centre for the Development of Vocational Training.
- Cedefop. (2018a). *France: series of reforms to transform vocational training*. European Center for the Development of Vocational Training.
- Cedefop. (2018b). *France: tackling unemployment - two million people to be trained by 2022*. European Center for the Development of Vocational Training.
- Chambres de Métiers et de l'Artisan. (2018).
- CNCP. (2018). *Commission Nationale de la Certification Professionnelle*. Retrieved from <http://www.cncp.gouv.fr/en/commission>
- CNEFOP. (2015). *Le financement et les effectifs de l'apprentissage*. Conseil national de l'emploi, de la formation et de l'orientation professionnelles .
- CNEFOP. (2018). *Conseil national de l'emploi, de la formation et de l'orientation professionnelles*. Retrieved from <http://www.cnefop.gouv.fr/>
- Code de l'éducation. (2018). *Code de l'éducation (Dernière modification : 31 mai 2018)*. Retrieved from <https://www.legifrance.gouv.fr>
- Council of Ministers. (2018). Retrieved from <http://www.gouvernement.fr/en/how-government-works>
- CPNEF. (2018). *Commission paritaire de l'emploi et de la formation*. Retrieved from <http://cpnef.info/Qui-sommes-nous/La-CPNEF>
- CREFOP. (2018). *Comité régional de l'emploi, de la formation et de l'orientation professionnelles*. Retrieved from <http://www.cpformation.com/crefop/>

- DARES. (2018). *Direction de l'animation de la recherche, des études et des statistiques*. Retrieved from <http://travail-emploi.gouv.fr/formation-professionnelle/>
- DCFP. (2017). *Département du Contrôle de la Formation Professionnelle*. Retrieved from <http://idf.directe.gouv.fr/Les-missions-du-controle-de-la-formation-professionnelle>
- Economist. (2016). *Democracy Index 2016: Democracy and its Discontents*. London: The Economist Intelligence Unit Limited.
- En-Marche. (2017). Retrieved from <https://en-marche.fr/emmanuel-macron/le-programme/alternance-apprentissage>
- EuroEducation. (2014). Retrieved from <http://www.euroeducation.net/prof/franco.htm>
- European Commission. (2016). *Education and Training Monitor 2016 - France*. European Union.
- European Commission. (2010). *The Bruges Communiqué on Enhanced European Cooperation in Vocational Education and Training for the Period 2011-2020*. Brussels: European Commission. Retrieved from <http://ec.europa.eu/education/policy/vocational-policy/doc/br> (September, 12, 2015).
- Eurostat. (2015). *Share of students in vocational education programmes, 2015 (%)*. Retrieved from [http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Share_of_students_in_vocational_education_programmes,_2015_\(%25\)_ET17.png](http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Share_of_students_in_vocational_education_programmes,_2015_(%25)_ET17.png)
- Eurostat. (2018a). *Employment by A*10 Industry Breakdowns (nama_10_a10_e)*. Retrieved from <http://appsso.eurostat.ec.europa.eu/nui/show.do> (September 14, 2015).
- Eurostat. (2018b). *Gross Value Added and Income by A*10 Industry Breakdown (nama_10_a10)*. Retrieved from <http://appsso.eurostat.ec.europa.eu/nui/show.do> (September 14, 2015).
- Eurydice. (2014). *Financing Schools in Europe*. Eurydice Report.
- Eurydice. (2016). *Admission to upper secondary education*. Eurydice Report.
- Eurydice. (2017). *The Structure of the European Education Systems*. Eurydice Report.
- Eurydice. (2018). *National Education Systems - France*. Eurydice Report.
- Fortune. (2018, 2 16). Retrieved 3 20, 2018, from <http://fortune.com/fortune500/list/>
- French Constitution. (2018). Retrieved from <https://www.legifrance.gouv.fr>

FrenchEntree. (2016). Retrieved from <https://www.frenchentree.com/living-in-france/education/french-private-schools/>

KOF. (2018a). KOF Swiss Economic Institute. Retrieved from <https://www.kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalisation-index.html>

KOF. (2018b). *KOF Youth Labour Market Index*. Zürich: KOF Swiss Economic Institute.

Ministère de l'Éducation nationale. (2010). *National Education and Vocational Education in France*. Ministère de l'Éducation nationale.

Ministère de l'Enseignement supérieur, de la Recherche et de l'innovation. (2013). *l'Enseignement supérieur en France*.

Ministère de l'Enseignement supérieur, de la Recherche et de l'innovation. (2018). Retrieved from <http://www.enseignementsup-recherche.gouv.fr>

Ministère de l'Éducation nationale. (2014). *The State of Education 2014*.

Ministère de l'Éducation Nationale. (2016). Retrieved from http://www.education.gouv.fr/pid285/bulletin_officiel.html?cid_bo=100573

Ministère de l'Éducation nationale. (2017). *School Education in France*.

Ministère de l'Éducation Nationale. (2018a). Retrieved from <http://www.education.gouv.fr/cid50753/la-formation-continue-des-adultes-a-l-education-nationale.html>

Ministère de l'Éducation Nationale. (2018b). *Transformation de L'apprentissage*.

Ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation. (2017). *L'état de l'Enseignement supérieur et de la Recherche en France*.

Ministère du travail. (2015). *L'apprentissage en 2014*.

Ministère du travail. (2017). *L'apprentissage en 2016*.

OECD. (2015). *OECD Labour Force Statistics*. Retrieved from https://stats.oecd.org/Index.aspx?DataSetCode=LFS_SEXAGE_I_R (September 22, 2015).

- OECD. (2016, July 19). *OECD iLibrary*. Retrieved from Education at a Glance 2016 - Indicator A1 To what level have adults studied?: http://www.oecd-ilibrary.org/education/education-at-a-glance-2016_eag-2016-en
- OECD. (2017a). *Short-Term Labour Market Statistics Dataset*. Retrieved from <http://stats.oecd.org/#>
- OECD. (2017b). *Government at a Glance 2017*. Organisation for Economic Co-operation and Development. Retrieved 3 20, 2018, from <http://www.oecd.org/gov/gov-at-a-glance-2017-france.pdf>
- OECD. (2017c). *Dataset: LFS by sex and age - indicators*. Retrieved from https://stats.oecd.org/Index.aspx?DataSetCode=LFS_SEXAGE_I_R#
- OECD. (2018a). *OECD Annual National Accounts. Gross Domestic Product (GDP)*. Organisation for Economic Co-Operation and Development. Retrieved from <https://stats.oecd.org/index.aspx?queryid=60702>
- OECD. (2018b). Organisation for Economic Co-Operation and Development. Retrieved from <http://stats.oecd.org/Index.aspx?DataSetCode=TUD#>
- OECD. (2018c). *OECD Employment Outlook 2018*. Paris: Organisation for Economic Co-Operation and Development. Retrieved from http://dx.doi.org/10.1787/empl_outlook-2018-en.
- Politico. (2017). The Politico Global Policy Lab.
- Renold, U., Bolli, T., Caves, K., Rageth, L., Agarwal, V., & Pusterla, F. (2016). *Feasibility Study for a Curriculum Comparison in Vocational Education and Training*. Zurich: KOF Studies. Retrieved from <https://doi.org/10.3929/ethz-a-010713492>
- Renold, U., Bolli, T., Egg, M. E., & Pusterla, F. (2014). *On the Multiple Dimensions of Youth Labour Markets - A Guide to the KOF Youth Labour Market Index*. Zurich: KOF Swiss Economic Institute. Retrieved from <https://doi.org/10.3929/ethz-a-010699115>
- SRC. (2018). *Service régionale de controle*. Retrieved from <http://grand-est.directe.gouv.fr/Declaration-d-activite-des-organismes-de-formation>
- Transparency International. (2017). *Corruption Perceptions Index*. Berlin: Transparency International.
- UNESCO. (2015). United Nations Educational, Scientific and Cultural Organisation. Retrieved from https://unevoc.unesco.org/wtdb/worldtvtdatabase_fra_en.pdf

UNESCO. (2018). *UNESCO Institute for Statistics*. Retrieved from UNESCO UIS: Education; Participation; Enrolment Ratios: <http://data.uis.unesco.org/?queryid=142#>

University Paris-Saclay. (2018). Retrieved from <https://www.polytechnique.edu/des-laboratoires-scientifiques-de-pointe>

WEF. (2018). *The Global Competitiveness Report*. World Economic Forum.

WENR. (2015). *Education in France*. World Education Services.

World Bank. (2017). *Worldwide Governance Indicators*. Washington: World Bank.

World Bank. (2018). *World Development Indicators*. Washington: World Bank.