

PART I
Chapter 2

Comparing Pension-system Parameters

The main features of OECD member countries' pension systems are summarised in Table 2.1. This follows the typology of the previous chapter (Table 1.1), dividing the pension system into two tiers. The summary necessarily leaves out much of the institutional details. More complete descriptions are provided in the country studies.

1. First-tier, redistributive schemes

The level of benefits under first-tier, redistributive schemes is expressed as a percentage of average earnings in each country. (Section 4 in Chapter 3 shows the average earnings data and describes their sources.)

In the cases of minimum pensions and basic schemes, the benefit entitlement is shown for a worker who enters at age 20 and works without interruption until he reaches the standard pension eligibility age. In most OECD countries, this is age 65. The social-assistance level is shown only when there is no specific, targeted scheme for poor pensioners. (Only full-career workers with very low earnings will be eligible for the targeted and social-assistance programmes; the majority of beneficiaries will be those with short and interrupted contribution histories.) The final row shows the total, first-tier benefit to which a full-career worker would be entitled. This is relevant because, in some cases, workers can receive several different types of first-tier benefits at the same time, while in others, people are only eligible for one of the different programmes.

The average minimum retirement benefit across OECD countries is a little under 29% of average earnings. The minimum pension in the Czech Republic is exceptionally low at just 12% of average earnings. The basic pension in Japan, minimum pension in Mexico and the targeted scheme in the United States are also on the low side, providing benefits worth one fifth or less of average earnings. At the other end of the spectrum, Luxembourg and Portugal have minimum pensions worth well above 40% of average earnings. Greece's minimum pensions, the targeted plan in Austria and the minimum pension credits in Belgium are also high compared to other OECD countries.

2. Second-tier, earnings-related schemes

The information on the second, earnings-related insurance tier begins with the type of earnings-related scheme that is provided: defined benefit, points or notional accounts. The main parameter which accounts for differences in the value of these schemes is the accrual rate per year of contribution, that is, the rate at which a worker earns benefit entitlements for each year of coverage. The accrual rate is expressed as a percentage of the earnings that are "covered" by the pension scheme. Most pension schemes cover only part of workers' earnings to calculate pension benefits. Often, contributions to the scheme are charged only on part of the earnings. The rationale behind such ceilings is the view that higher-income workers can save individually if they want to reach a high replacement rate.

Only four countries (Australia, Ireland, Mexico and New Zealand) do not have an earnings-related, second-tier scheme. Most countries have schemes of the traditional

Table 2.1. Summary of pension system parameters

	Australia	Austria	Belgium	Canada	Czech Republic	Denmark	Finland	France	Germany	Greece	Hungary	Iceland	Ireland	Italy	Japan	
First tier																
<i>(% average earnings)</i>																
Social assistance	–	–	–	–	10	–	–	–	24	–	–	–	–	22	–	
Targeted	23	37	23	16	–	17	21	31	–	12	–	25 ⁸	28	–	–	
Basic	–	–	–	14	8	17	–	–	–	–	–	–	31	–	19	
Minimum	–	–	38 ¹	–	12	–	–	29	–	40	22	–	–	–	–	
Overall entitlement	23	37	38	30	12	34	21	31	24	40	22	25	31	22	19	
<i>(full-career worker)</i>																
Second tier																
Earnings-related																
Type	None	DB	DB	DB	DB	DB/DC	DB	DB/points	Points	DB	DB	DB	None	N. acs	DB	
Accrual rate (% indiv. earnings)	–	1.78	1.50	0.63	0.45 [w] ²	–	1.5 [a] ⁴	1.75 [w] ^{5, 6}	1.00	2.57 ⁵	1.22	1.40	–	–	0.71	
Defined contribution																
Contribution rate																
<i>(% indiv. earnings)</i>	9	–	–	–	–	1	–	–	–	–	8	–	–	–	–	
Ceilings																
<i>(% average earnings)</i>																
Public	–	164	129	100	None	–	–	128	164	325 ⁷	220	–	–	357	175	
Private/occupational	234	–	–	–	–	–	None	385	–	–	220	None	–	–	–	
Pension age																
Normal	65	65	65	65	63	65	65	60	65	65	62	67	66	65	65	
<i>(women)</i>	–	60	–	–	59-63 ³	–	–	–	–	–	–	–	–	–	–	
Early	55	–	60	60	60	–	60	–	63	57	–	–	65	60	60	
<i>(women)</i>	–	–	–	–	56-60 ³	–	–	–	–	–	–	–	–	–	–	

Notes to Table 2.1 (see also country studies, Part II, for fuller details): Parameters are based on 2002 values but include all legislated changes even when these take effect in the future. Pension ages for women are only shown where these are different from those for men. Early pension ages are only shown where relevant.

DB: Defined benefit.

DC: Defined contribution.

N. acs: Notional accounts.

– Not relevant.

[w] = Varies with earnings.

[y] = Varies with years of service.

[a] = Varies with age.

Table 2.1. **Summary of pension system parameters (cont.)**

	Korea	Luxembourg	Mexico	Netherlands	New Zealand	Norway	Poland	Portugal	Slovak Republic	Spain	Sweden	Switzerland	Turkey	United Kingdom	United States
First tier															
<i>(% average earnings)</i>															
Social assistance	–	36	–	–	–	–	–	–	–	–	–	–	–	–	–
Targeted	–	–	19	34	–	33	–	20	–	–	34	26	6	26	20
Basic	30	12	–	34	38	18	–	–	–	–	–	–	–	20	–
Minimum	–	46	–	–	–	–	24	44	*22	33	–	19	28	13 ¹	–
Overall entitlement <i>(full career worker)</i>	30	46	19	34	38	33	24	44	22	33	34	26	28	33	20
Second tier															
Earnings-related															
Type	<i>DB</i>	<i>DB</i>	<i>None</i>	<i>DB</i>	<i>None</i>	<i>Points</i>	<i>N. acs</i>	<i>DB</i>	<i>Points</i>	<i>DB</i>	<i>N. acs</i>	<i>DB</i>	<i>DB</i>	<i>DB</i>	<i>DB</i>
Accrual rate (% indiv. earnings)	0.75	1.85 [y] ⁹	–	1.75 ¹¹	–	1.05 [w] ¹²	0.67	2.25 [w] ²	1.19	3.0 [y] ¹³	1.21 [w] ^{5, 6}	[w/a]	2.0 [y] ¹³	0.89 [w]	0.91 [w] ²
Defined contribution															
Contribution rate															
<i>(% indiv. earnings)</i>	–	–	6.5 ¹⁰	–	–	–	7.3	–	–	–	4.5 ⁵	–	–	–	–
Ceilings															
<i>(% average earnings)</i>															
Public	189	240 ⁷	–	–	–	219	245	None	300	189	132	116	173	156	262
Private/occupational	–	–	482	None	–	–	–	–	–	–	367	116	–	–	–
Pension age															
Normal	60	65	65	65	65	67	65	65	62	65	65	65	60	65	67
<i>(women)</i>			60				60					64	58		
Early	55	57		60				55		60	61	63			62
<i>(women)</i>												62			

1. Belgium, United Kingdom: minimum benefit calculated from minimum credit.

2. Czech Republic, Portugal, United States: higher accrual rates for lower earnings, lower accrual rates for higher earnings.

3. Czech Republic: pension ages for women vary with the number of children.

4. Finland: higher accrual rates at older ages.

5. France, Greece, Sweden: data shown combines two different programmes (public and occupational plans).

6. France, Sweden: higher accrual rates for higher earnings.

7. Greece: effective ceiling calculated from maximum pension.

8. Iceland: includes three different programmes (basic pension and two supplements).

9. Luxembourg: accrual rate is higher for longer contribution periods.

10. Mexico: additional contribution of 5.5% of minimum wage.

11. Netherlands: accrual rate varies between occupational schemes.

12. Norway: lower accrual rate for higher earnings.

13. Spain, Turkey: higher accrual rate for early years of service and lower for later years.

Source: Based on information provided by national authorities.

defined-benefit variety for which accrual rates can be calculated in a straightforward way. For the alternative types of earnings-related scheme – points systems and notional accounts – it is also possible to calculate an “effective” accrual rate.

For points systems, such as the German public plan, French occupational schemes and the new Slovak public pension, the effective accrual rate shown in Table 2.1 is the ratio of the cost of a pension point to the pension-point value, expressed as percentage of individual earnings. This, like the accrual rate in DB schemes, gives the benefit earned each year as a proportion of earnings in that year. The details of this calculation are set out in Annex I.1.

In the notional-accounts schemes, the effective accrual rate is calculated in a similar way. Again, this ratio gives the annual pension entitlement as a proportion of earnings in a given year. The calculation is again described in detail in Annex I.1.

In a little under half of the countries with earnings-related plans (of all three types), the accrual rates are linear: that is, a single percentage rate applies across the range of covered earnings and to each and every year of coverage. In the other countries, the pension benefit earned for each year of coverage varies, either with individual earnings, with the number of years of contributions or with individual age. Table 2.1 shows a “typical” accrual rate in these cases; the details are provided in the country studies (Part II).

In seven cases, the accrual rate varies with earnings (indicated in Table 2.1 by [w]). In the public schemes of the Czech Republic, Switzerland, Portugal and the United States, the pattern is progressive, giving higher replacement rates to lower-income workers. In the United Kingdom, the accrual rates are U-shaped, highest for low earners, then smaller, then higher again. In the occupational plans of France and Sweden, the schemes are designed to offset the redistribution in the public scheme; they pay a higher replacement rate to high earners on their pay above the ceiling of the public plan.

In the occupational plans of Finland and Switzerland, pension accrual increases with age (shown as [a]).

Three countries have accrual rates that vary with length of service ([y]). In Luxembourg, the accrual rate increases for people with a longer contribution history. In Spain and Turkey, there are three accrual rates. The pattern is the reverse of that in Luxembourg: the highest accrual rate is for the first few years of coverage and the lowest for later years in longer contribution histories.

3. Earnings measures and valorisation in earnings-related schemes

There are two important mechanisms in earnings-related schemes that greatly influence the level of benefits that pensioners will eventually receive. The first is the measure of individual earnings used in the benefit formula. Entitlements in these schemes are calculated in relation to the past earnings of the individual worker but the way in which these are measured differs among countries. The measure might be, for example, a period of final earnings, the lifetime average or a number of best years of earnings. When individual earnings increase over a worker’s career, as is often the case, using only final or a few last years of earnings will result in a higher benefit than when taking into account early years of the career when earnings were much lower.

The second mechanism is valorisation, which is often over-looked in pension-policy analysis, but has a large effect on pension entitlements. Past earnings are “valorised” to take account of changes in living standards between the time pension rights accrued and the time

Table 2.2. **Earnings measure and valorisation: earnings-related schemes**

	Measure of individual earnings	Valorisation of earlier years' earnings
Australia	–	–
Austria	Best 15 moving to 40 years	To be decided (average earnings probable)
Belgium	Lifetime average	Prices
Canada	Lifetime average excluding worst 15% of years	Average earnings
Czech Republic	Since 1985 moving to 30 years	Average earnings
Denmark	–	–
Finland	Final 10 years moving to lifetime average	50% prices/average earnings moving to 20%/80%
France	Best 20 moving to 25 years (public) Lifetime average (ARRCO points)	Prices (public) Prices (ARRCO)
Germany	Lifetime average (points)	Average earnings with adjustment for changes in contribution rates and potential contribution to voluntary pensions
Greece	Final 5 years	Increases in pensions of public-sector workers
Hungary	Since 1988 moving to lifetime average	Average earnings
Iceland	Lifetime average (occupational)	Prices
Ireland	–	–
Italy	Lifetime average (notional accounts)	Moving average of nominal GDP growth over 5 years
Japan	Lifetime average	Average earnings
Korea	Lifetime average	Prices
Luxembourg	Lifetime average	Average earnings
Mexico	–	–
Netherlands	Lifetime average for approx. two-thirds and final for one-third of schemes (occupational)	Typically average earnings (occupational)
New Zealand	–	–
Norway	Best 20 years (points)	Average earnings
Poland	Lifetime average (notional accounts)	Prices + 75% of real-wage-bill growth; from 2004, real wage bill growth but at least price inflation
Portugal	Best 10 out of final 15 moving to lifetime average	75% prices and 25% average earnings with maximum real growth of 0.5%
Slovak Republic	Lifetime average (points)	Average earnings
Spain	Final 15 years	Prices up to 2 years before retirement
Sweden	Lifetime average (notional accounts) Final (occupational scheme)	Average earnings with potential adjustment for demographics (notional accounts) No valorisation – final salary
Switzerland	Lifetime average (public scheme) Lifetime average (occupational)	Average earnings Minimum interest rate specified
Turkey	Lifetime average	Nominal GDP growth
United Kingdom	Lifetime average	Average earnings
United States	Best 35 years	Average earnings up to age 60; prices from 62 to 67

– Country does not have an earnings-related scheme.

Source: Based on information provided by national authorities.

they are claimed. In final-salary schemes there is obviously no need for valorisation but it is common in schemes where benefits are based on earnings over a longer period. Both rules are summarised in Table 2.2. Again, more detail is provided in the country studies.

Of the 25 countries with earnings-related schemes, 20 use lifetime average (or close to lifetime average) pay as the earnings measure for calculating pension benefits. This means that all (or nearly all) years of previous earnings count in determining the pension entitlement. The exceptions are the public schemes of France, Greece, Portugal and Spain, the Norwegian points-based scheme and Swedish occupational pensions. Earnings are averaged over shorter periods in these cases. Some countries are currently phasing in longer averaging periods for earnings in their benefit calculation (Austria, Finland, Hungary and Portugal).

Table 2.2 shows valorisation rules – and the equivalent policies for notional accounts and points systems – in the final column.¹ In 14 cases, past earnings are valorised in line with growth of earnings (or close, as in the United States). In Italy and Turkey, adjustments are linked to a measure of GDP growth. Valorisation is purely with prices in Belgium, France (both the public scheme and occupational plans) and Spain. Finland, Poland and Portugal valorise with a mix of earnings and prices.

The effect of valorisation policy on pension entitlements can be very large. This is due to a “compound-interest” effect. On the baseline economic assumptions used in this report – i.e., real wage growth of 2% and price inflation of 2.5% – prices valorisation for a full-career (between age 20 and 65) results in a pension that would be 40% lower than a policy of full adjustment of earlier years’ pay in line with economy-wide average earnings.

4. Defined-contribution schemes

Among OECD countries, Australia has the largest mandatory defined contribution scheme: employers must pay 9% of their employees’ earnings into their pension accounts. In Mexico, the contribution is 6.5% of earnings with the government paying 5.5% of the minimum wage into all accounts. For an average earner, the total contribution comes to 7.1% of earnings, similar to Poland’s contribution rate (7.3%). Hungary has slightly higher contributions (8% of earnings). In Denmark and Sweden, the mandatory contribution rates are much lower. The savings scheme in Denmark requires contributions of just 1% of earnings, but DC occupational plans (which cover the vast majority of employees) have contribution rates that vary between 9 and 17%. In Sweden, where there are two DC programmes, the mandatory scheme requires contributions of 2.5% of earnings and the occupational plan, 2%.

5. Ceilings on pensionable earnings

Most countries do not require high-income workers to contribute to the pension system on their entire earnings. Usually, a limit is set on the earnings used both to calculate contribution liability and pension benefits. This ceiling on the earnings covered by the pension system has an important effect on the structure, size and cost of the second-tier systems. High ceilings or the absence of a ceiling means that high-income workers receive a high replacement rate and there is little need for take-up of voluntary private pensions.

The average ceiling on public pensions for 19 countries is 183% of average economy-wide earnings.² In addition to those countries with no ceiling, the ceiling on pensionable pay is very high relative to average pay in Italy. By contrast, at roughly the level of average economy-wide earnings, the Canadian ceiling is exceptionally low. Belgium, France and Sweden also have relatively low ceilings, of the order of 125-135% of average earnings. In these countries, around 15-20% of workers earn above the ceiling of the public scheme.

Table 2.1 also shows ceilings for mandatory private pension systems and for the public, occupational plans in France and Finland. Of the 10 countries with this type of programme, three have no ceiling: Finland, Iceland and the Netherlands. The ceilings of the occupational plans in France and Sweden are three and 2.8 times respectively the cap on pensionable earnings in the public programme (equivalent to well over 3½ times average economy-wide earnings). The ceiling on mandatory contributions to the defined-contribution plan in Mexico is also relatively high, at nearly five times average earnings.

It is possible to calculate an overall ceiling on mandatory pensions, including mandatory private and occupational schemes where appropriate. This averages 225% of average earnings across 21 countries, which is rather higher than the 183% average ceiling on public schemes alone.

6. Pension eligibility ages

Table 2.1 shows that the majority of OECD member countries have a standard retirement age of 65 for men. Pension eligibility ages for women are still lower in several countries but, in most of these, they will be equalised gradually with those of men (Belgium, Hungary and the United Kingdom). Iceland, Norway and the United States stand out as having a standard pension age of 67. At the other extreme, France and Turkey are the only countries which allow normal retirement at age 60. Two-thirds of OECD member countries also have special provisions for early retirement.³

7. Indexation of pensions in payment

Indexation refers to the policy for the up-rating of pensions in payment from the point of claim of the pension benefit onwards. Typically, pension benefits are adjusted in line with an index of consumer prices, although in some cases the adjustments also take account of changes in average earnings.

Few countries had formal indexation rules when pension schemes were established. But the high-inflation era of the 1970s led most governments to adopt automatic procedures.⁴ There are still a few cases of discretionary adjustments, particularly for social-assistance type benefits or those linked to minimum wages.

However, most indexation is fully to prices. Many countries moved from earnings indexation to prices during the 1980s and 1990s as a cost-cutting measure (given that wages have grown faster than prices in nearly all countries). With price indexation, the purchasing power of pensions is preserved. But the standard of living of individual retirees over time falls behind that of workers.

Some countries, such as Finland, Hungary, Poland and the Slovak Republic have adopted indexation to a mix of price and wage inflation, as pioneered by Switzerland. Table 2.3 gives an overview of procedures for adjusting pensions in payment by both country and pension programme.

8. Taxes and social security contributions

Income taxes and, usually, social security contributions levied on pensioners have an important impact on *net* incomes from pensions relative to earnings during working life.⁵ Pensioners often do not pay social security contributions. Personal income taxes are progressive: the average tax rate on (lower) pension income will be less than the tax rate on (higher) earned income since replacement rates are nearly always less than 100%. In addition, most income tax systems give preferential treatment to pensions (exempting some or all of income from tax) or to pensioners (giving additional allowances, credits or zero-rate bands to the elderly). Replacement rates net of taxes and contributions are higher than gross replacement rates.

Table 2.3. **Procedures for adjustment of pensions in payment by country and scheme**

Percentage of total adjustment linked to prices or earnings

	Scheme	Prices	Earnings	Other/notes
Australia	Targeted		100	
	Defined contribution			Individual choice
Austria	Earnings-related			Discretionary; prices assumed in modelling
Belgium	Social assistance	100		
	Minimum pension	100		Price index excludes alcohol, cigarettes and fuel; increases only if inflation exceeds 2%
	Earnings-related	100		
Canada	Targeted	100		
	Basic	100		
	Earnings-related	100		
Czech Republic	Basic	67	33	Adjustment to prices plus increases of at least one third of real wage growth
	Earnings-related	67	33	
	Minimum	100		
Denmark	Targeted		100	
	Basic		100	
	ATP			Discretionary
	Defined contribution			Periodic bonuses
Finland	Basic	100		
	Earnings-related	80	20	
France	Targeted		100	
	Minimum	100		
	Earnings-related	100		
	Occupational	100		No automatic procedure but recent practice
Germany	Social assistance			Discretionary
	Earnings-related		100	Wages net of pension contributions
Greece	Minimum		100	
	Targeted			Discretionary
	Earnings-related			Discretionary
Hungary	Minimum	50	50	
	Earnings-related	50	50	
	Defined contribution	50	50	
Iceland	Targeted		100	In line with public-sector pay
	Occupational	100		Minimum legal uprating
Ireland	Targeted		100	
	Basic pension		100	
Italy	Social assistance			Discretionary
	Earnings-related	75-100		Increase between full and 75% price indexation depending on pension level
Japan	Basic	100		
	Earnings-related	100		
Korea	Earnings-related	100		
Luxembourg	Social assistance			Discretionary
	Basic		100	At least prices with extra increase related to earnings growth
	Minimum		100	
	Earnings-related		100	
Mexico	Minimum	100		Equal to real value of minimum wage for 1997
	Defined contribution	100		Individual can also choose gradual withdrawal
Netherlands	Basic		100	Net minimum wage
	Occupational		100	No legal requirement but customary
New Zealand	Basic		100	
Norway	Targeted		100	
	Basic		100	
	Earnings-related		100	

Table 2.3. **Procedures for adjustment of pensions in payment by country and scheme** (cont.)

Percentage of total adjustment linked to prices or earnings

	Scheme	Prices	Earnings	Other/notes
Poland	Minimum	80	20	
	Defined contribution	100		
Portugal	Targeted			Discretionary increases; recently above prices
	Minimum		100	Minimum wage net of contributions
	Earnings-related	100		
Slovak Republic	Earnings-related	50	50	
Spain	Earnings-related	100		
Sweden	Targeted	100		
	Earnings-related			Gross earnings less "growth norm" of 1.6%
	Occupational		100	
Switzerland	Targeted	50	50	
	Earnings-related	50	50	
	Occupational			Discretionary
Turkey	Targeted	100		
	Earnings-related	100		
United Kingdom	Targeted			Prices or more; up to wages if possible given fiscal situation
	Basic	100		
	Earnings-related	100		
United States	Targeted	100		
	Earnings-related	100		

Source: Based on information provided by national authorities.

The relevant features of personal income taxes and social security contributions are divided into three categories:

- Age-based tax allowances and tax credits, which exceed those available to taxpayers of working age. In many cases, the concessions are targeted on those with modest incomes and are withdrawn as income increases.
- Reliefs for some or all of pension income received. Several countries exempt fully or partially pensions paid from public sources from the personal income tax. And, in some cases, there is a preferential tax treatment for modest pensions paid from private-sector schemes.
- Social security contributions are typically levied only on wage income⁶ and not on pension benefits. However, some countries charge contributions on pension income for health and long-term care insurance or for survivors' insurance.

Table 2.4 gives an overview of the three categories of concessions in the 30 OECD countries. Although the table reports concessions to income streams from private pensions, it excludes, for example, reliefs granted to lump-sum withdrawals from personal or occupational pension plans. Furthermore, other aspects of the tax treatment of private pensions (such as the treatment of contributions and investment returns at the fund level) are not considered in this table.

Table 2.4. **Categories of concession available to pensioners**

	Increased tax allowances or tax credit	Relief or partial relief for pension income	Social security contributions paid by pensioners
Australia	✓		–
Austria			Low
Belgium	✓		Low
Canada	✓	✓	None
Czech Republic	✓		None
Denmark		✓	None
Finland	✓		Low
France		✓	Low
Germany		✓	Low
Greece			None
Hungary		✓	None
Iceland			None
Ireland	✓		None
Italy	✓	✓	None
Japan	✓		Low
Korea	✓	✓	None
Luxembourg	✓		Low
Mexico	✓		None
Netherlands	✓		Low
New Zealand			–
Norway	✓	✓	Low
Poland			Low
Portugal			None
Slovak Republic			None
Spain			None
Sweden			None
Switzerland			None
Turkey		✓	None
United Kingdom	✓		None
United States	✓	✓	None

Source: Based on information provided by national authorities.

Notes

- Adjustments related to valorisation exist also in the different variants of earnings-related schemes. In notional accounts, the exact corollary to valorisation is the notional interest rate applied, which again adjusts benefits between the time they were earned and that time that they are drawn. Similarly, procedures for uprating the value of a pension point in points systems have the same effect. (The detailed reasoning is shown in Annex I.1.)
- This excludes the eight countries where there is no public pension scheme for which a ceiling is relevant (such as basic or targeted programmes) and the three countries that have no ceiling on earnings eligible for a public pension.
- Preliminary work on the value of pension benefits at different retirement ages has been published in Casey *et al.* (2003) and OECD (2001).
- See Weaver (1988). In practice, benefit increases have often strayed from that set out in the rules: see Vordring and Goudswaard (1997).
- See Whiteford (1995) for a discussion of these issues.
- There are some social contributions with a broader base than earnings, such as the CSG (*contribution sociale généralisée*) in France.

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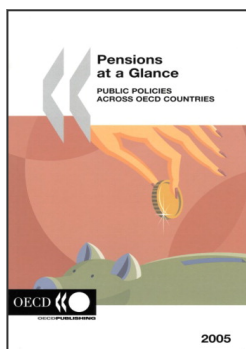
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