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**Master Thesis**

**Fiscal equalization from theory to practice:  
A comparative study on  
Australia, Germany and Switzerland**

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**To Pham Thi Lan**

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# Abstract

This thesis aims to analyze the fiscal equalization mechanism which is one of the most important instrument for interlocking the different layers of government with regard to financial transfer.

In the first part, I review some important theoretical aspects of equalization that have been debated over the second half of the 20<sup>th</sup> century. Most of academic discussion focused on the problem of migratory movement in an open market economy, the question of fiscal equity and the territorial externality and so on.

The second part is devoted to comparative case studies on the actual fiscal equalization in three constitutionally federal countries: Australia, Germany and Switzerland. Although the principle of equalization remains the same, the formation and evolution of each system diverges due to institutional settings and the historical events which influence on the formula used for the calculation of pool and allocation. A comparison of subnational fiscal capacities before and after equalization reveal the performance of each system which permits to provide certain arguments and perspective for future development of fiscal equalization schemes.

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# Introduction

Nowadays, most of developed countries implement fiscal equalization to provide financial resource to subnational governments under certain forms of intergovernmental grant. The effective transfer can be organized vertically from the central to the subnational levels or horizontally between the governments of the same level. The size of fiscal equalization transfer remains modest around 2.3 percent of GDP and varies 0.5 to 3.8 percent of GDP or 1.2 to 7.2 percent of government expenditure (Blöchliger et al., 2007, p.6). However, the equalization transfer has become an important resource for financing the local public goods and service. In comparison to other intergovernmental transfers, fiscal equalization is both economically and politically accepted due to its clear scheme.

Since 1950s, the theory of fiscal equalization mechanism has been developed into a rich literature which results in different interpretations and applications in practice. The first paper on fiscal equalization raising the critical debates around the issue is published by James M. Buchanan (1950). In following years, other economists such as Anthony D. Scott (1950, 1952), Robin Boadway, Frank Flatters (1982a, 1982b) and Richard Musgrave (1999) advanced their contributions on both the theoretical discussions and practical aspects which facilitates to clarify principles and implement of fiscal equalization.

According to Economist Wallace E. Oates (2011, p. 18) « [...] in economic term most if not all systems are federal». The fiscal equalization is commonly designed in constitutionally federal system with high level of decentralization. However, unitary countries are also interested in framing such an equalization mechanism according to their institutional settings. As in the case of Scandinavian nations, they are constitutionally unitary countries. However, they are de facto becoming more decentralized systems and implement fiscal equalization as well. After the fall of the communist system, Eastern European countries have been changing from a centralized to decentralized management of public sector. From this point of view,

fiscal equalization is inspired by Eastern European governments to fulfil the process of fiscal decentralization.

In regard to the current economic crisis, a number of economists such as de Grauwe (2010, 2012), Rossi and Dafflon (2012) have recently argued in favor of fiscal equalization to complete the economic and monetary union. When a group of countries relinquishes voluntarily their own monetary policies to form a new monetary institution, this will lead to a loss of an important tool to deal with the macroeconomic policy, especially during the crisis time. Consequently, the Member States governments can only rely on the fiscal policy to support the demand side. However, as Member States are bound to budgetary constraints of the Maastricht Treaty, they would be found in difficult condition to handle taxing and spending. The transfer from equalization fund can serve as an instrument to transfer fiscal resource from the less affected to most affected Member States.

When people participate in a common market, they would have incentive to share certain common goods which benefit all the members of union. Evidence of European Union shows that the intra-branch trade is becoming dominant over inter-branch trade which means that European countries exchange increasingly similar products of the same sector (Mathilde *et al.*, 2007, p.314). Therefore, it is legitimate to produce certain common goods which benefit all citizens within the economic union at a shared cost. Moreover, when the free movement of person and capital is assumedly perfect, some economic distortions would occur for the reason that the tax bases is on moving from one Member State to another. Consequently, there would be a loss of tax revenue for the country from which the tax base departs and an increasing of tax revenue in another. Thus, the equalization allows to reestablish fiscal equity in term of budget transfer between members of highly decentralized union.

# Chapter 1 The theory and debate on fiscal equalization

## 1.1 Problem of fiscal residuum under fiscal federalism

The two famous working papers of economist James Buchanan were published in 1950s where he, for the first time, discussed about the fiscal equalization. The starting point for his analysis is the concept of fiscal equity between regional governments in a federal system where most of the budgetary responsibilities are assigned to subnational governments. His most robust saying is: «Do not treat equals unequally ». Then, he advanced his argument that the place of residence is not the reason to discriminate individuals in term of taxation. James Buchanan presented his model coupled with six following hypothesis:

- Individual income is uniquely determined by productivity;
- Individual tax is progressive at federal level: 5 percent and 10 percent;
- Individual tax is proportional at regional level: 10 percent;
- There is no spillover effect;
- Two pure public goods: One at the federal and another at two regional levels;
- Budgets are balanced at two levels.

**Table 1.1 Numeric example of James Buchanan's model <sup>1</sup>**

Contributors		Central F		Region A		Region B		Total
Resident	Income	Rate	Revenue	Rate	Revenue	Rate	Revenue	Paid tax
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A1	10'000	10	1'000	10	1'000			2'000
A2	10'000	10	1'000	10	1'000			2'000
A3	1'000	5	50	10	100			150
B1	10'000	10	1'000			10	1'000	2'000
B2	1'000	5	50			10	100	150
B3	1'000	5	50			10	100	150
Total	33'000		3'150		2'100		1'200	6'450

<sup>1</sup> In the original version of Buchanan's model, he uses a progressive tax scale. Dafflon (2009) argues that applying a proportional scale does not change the nature of problem with regard to fiscal residuum.

*Source: Adapted from Buchanan (1950) by Dafflon, (2009), translation.*

As given in the example of table 1.1: A federal country with one central entity and two regions A and B. In practice, the central is identified as federal level and the regions are states, canton, regions or landers. Inhabitants are endowed with productivity as the only source of income and can be classified into two groups of labor productivity: High and low. Individuals with high productivity get a higher salary at 10.000 and individuals with lower productivity get 1.000 monetary units.

The region A has two inhabitants with high-productivity and one with low-productivity. Whereas, the region B has one inhabitant with high productivity inhabitant and two with low productivity. The individual productivity and the distribution of individual income are identical in both regions, the only thing that makes the difference is their places of residence. The central government applies a progressive scale of income tax which imposes a rate of 10 percent on the incomes of high productivity inhabitants and 5 percent on those of low productivity inhabitants. The regional governments impose a proportional rate of 10 percent to all inhabitants of any income. In this way, the taxing system is considered equal in term of contributive capacity.

However, this situation changes when we take into account that the total tax serves to finance two kinds of public goods. The central public goods or pure public goods which are produced by the central government and provide equal benefits to all inhabitants. Meanwhile, the local public goods provide benefits exclusively to the residents of each region. Consequently, table 1.2 column (3) shows that inhabitants of the region A benefit from the central public goods plus local public goods for a total amount 5 250 and inhabitants of the region B derive benefit of 4 350 monetary units. By subtracting the total benefit to the total tax, the fiscal residuum of inhabitant in the region B is higher than those of the region A. This result is unequal in term of fiscal equity because inhabitants of the region A benefit from a lower fiscal residuum than those of region B even though they have identical incomes and fiscal system.

**Table 1.2 Differences of fiscal residuum and payment requirement**

Region	Total Taxes	Total benefit	Fiscal residuum	Required transfer	Net result
(1)	(2)	(3)	(4)	(5)	(6)
A1	2'000	$3'150+2'100=5'250$	3'250	-300	2'950
A2	2'000	$3'150+2'100=5'250$	3'250	-300	2'950
A3	150	$3'150+2'100=5'250$	5'100	-600	4'500
B1	2'000	$3'150+1'200=4'350$	2'350	+600	2'950
B2	150	$3'150+1'200=4'350$	4'200	+300	4'500
B3	150	$3'150+1'200=4'350$	4'200	+300	4'500

*Source: Adapted from Buchanan (1950) by Dafflon (2009), translation.*

In referring to the above example, equalization mechanism should be implemented to attain the goal of fiscal equity. Individuals with identical incomes (A1, A2 and B1) should obtain the same fiscal residuum when a fiscal transfer is made from the region A to the region B with an amount of 600, respectively for A3, B2 and B3.

In his discussion about possible solutions, James Buchanan (1950, p. 598) argues that applying another income tax progression or another measure for the redistribution of public goods at the federal level cannot change the result because the central government applies a tax discrimination in order to redistribute income between individuals. Residents of region A known as A1 and A2 have to pay 1 300 in tax to the central government in order to finance the central public goods and the transfer (1 000+300), while B1 with the same income pays only 400 in net value (federal tax of 1 000-600 for equalization subvention). Likewise, the individual with the lower income: A3 have to pay 650 in which 50 is paid for the federal public goods and 600 for the redistribution to B1, B2. Meanwhile, B1 and B3 receive a net subvention of 250 where 50 for the federal public goods and -300 for the subvention for equalization transfer to reestablish the fiscal residuum. We recognize that how the federal law can discriminate horizontally the economic agent with the same situation before paying the tax (A1, A2, B1) or vertically (because A3 with less income in region A might pay more federal tax than A1, A2, for the redistribution policy to region B). Face to this major problem, it may need a constitutional interdiction to avoid the tax discrimination.

Another solution is that some kind of equalization transfer should be in place of a constitutional reform which might take a long time to be done while the internal redistribution policies are schemed by each region independently. As following, the result can be changed by a rearrangement at the regional level, a modification of regional tax rate or another measure for the redistribution of local public goods. However, if the local public good and service are financed by the user-payer principle, there is no need for equalization transfer because the fiscal residuum will be reduced until zero as the inhabitant receive the «value» of local public goods exactly equal to the «public price» as he pays.

Richard Musgrave (1963) commented that the obtained result by James M Buchanan' model depends on the manner by which the benefit of public goods and service are distributed. In applying the principle of equivalence at the local level, there would have no need for equalization. This indicates surely that the differences are generated from the choice of financing of regions. When the equivalent principle is ignored and passed to criteria of contributive capacity, then the choice on the form of tax and de degree of progressivity which is the option of local public finances: So for categories which use the principle of equivalence should not be compensated.

Equalization transfer in this model is neither for the goal of redistribution of income between region A to B nor a fiscal gift to region B or transfer from a rich region to a poor region in the sense of redistributive policies where the poor region receives such payment for the reason of its disfavored economic conditions. The real objective of this system is to reestablish fiscal equity between individuals having identical financial capacities.

Although the simple model of James Buchanan is quite restrictive to certain hypothesis, the necessity for such an equalization mechanism is broadly accepted. However, some further questions should be answered such as how to calculate the value of local public goods and what kind of tax should or should not be taken into the formula. This becomes more complicated when many tax resources are taken

into account at the same time because each tax category need to be standardized before being aggregated. Moreover, in order to transform the theory to concrete application of fiscal equalization, there are some other questions should be answered on how to apply the individual principle of fiscal equity to equalization between subnational levels, which economic indicators are used to measure inter regional inequality and what are possible strategic behaviors of regional governments to obtain the largest transfer payment.

## 1.2 Academic debates on the equalization

Following the publication of James M Buchanan's paper, there was a number of academic debates on the implementation and possible effects of fiscal equalization. Most arguments focus on the migratory movement in an open market economy, vertical and horizontal equity, inter-jurisdictional spillover effect and risk-sharing function of equalization transfer.

### 1.2.1 On migratory movement in an open market

An open market without intervention of public sector is likely to mal-function, there is no particular reason to confirm that a free market can direct the allocation of resource between regions to be efficient. Under this aspect, how the equalization transfer contribute to improve the result by leading to higher market efficiency? Anthony Scott (1952) advanced the argument that the transfer from the «rich regions» to «poor regions» through equalization mechanism allows the latter to produce a package of local public goods at a price which is equal to the fiscal residuum. This is a deformation of the price mechanism in a market economy. These kinds of transfer may bring about a distortion of resource allocation between regions and delay, as well as possibly discourage labor mobility between them. His argument remains strongly at the center of debate in an economy of globalization and the validity of his argument is pertinent: Urban centers with a high level of economic productivity cannot be punished by a financial equalization which increases economic activity of periphery collectivities. In reality, certain regions



have a large number of a financially strong contributors representing for their economic efficiency in term of the quality of local public goods and the fiscal price. However, he also noticed that without an equalization transfer, economic agents are under pressure and forced to exit the poor region and migrate to the region with a strong economic development, so that setting up such a transfer aiming at providing the poor region a packet of local public goods, at least at the minimum level in certain important domains such as education and public health, to deliver inhabitants in the poor region a choice.

James Buchanan (1952a, 1952b) underlined that such an equalization mechanism is commonly accepted according to ethical standard. He also contested the idea that the transfer from the «more developed regions » to the « less developed regions» delays the resource allocation toward better utilization. Equalization transfer will not hamper the efficiency objective. Whereas, such transfer will delay inefficient migration due to the unequal treatment of equals. In his sense, local public budgets without a corrective measure are factors of distortion because the migration incentives take root uniquely on the base of local fiscal system by which residents locally compare his tax burden to the benefit that they receive from local public goods and services. As a result, this will interrupt the allocation of production factors according to their marginal productivities. In other words, the difference between the local public budgets deforms the calculations on which the migration decisions are taken.

Another important aspect is that the concept of «poor region» or «less developed regions» must be defined concisely: They are poor because they do not acquire enough fiscal resources or gain low income per capita. So that, there is no potential for development of regional economies. In certain case, inter-regional policy under some kind of collaboration or fusion between near-by collectivities can set the way for regional economy to take off.

In referring to the fiscal burden, residents in richer regions attract more benefit from the public goods and services, then more important part of the public expenditure.

Put differently, with the same fiscal burden on the two regions, the rich region have a higher fiscal capacity than the poor regions. They also dispose more fiscal resource, so that the rich region can provides more the supplementary public goods and services to their inhabitants. This fiscal difference should be compensated because it influences the migration of economic agents in order to prevent the migration movement of the inhabitant from the poor region to the rich region for the only reason of fiscal opportunism. According to Richard Musgrave (1952), the choice of migration is not only based on the fiscal difference but also on other factors that affect the migration decision of economic agents, therefore this difference is not considered as a factor of distortion of resource allocation. The same opinion on the arrangement of fiscal federalism is clear as the federal system is found on the idea of respecting the autonomy of locality. The consequence the migration choice may be regrettable at certain limit, however this is the characteristic of federal system that should be accepted.

Robin Boadway and Frank Flatters (1982) advanced their works with arguments rooting from the allocative efficiency to support the fiscal equalization. Allocation of production factors is optimal if there is not any geographic reallocation of factors possible to increase the aggregated production. This spatial argument depends widely on the definitive mobility of production factors between jurisdictions, especially, the mobility of labor factor. In absence of migration cost, they change their resident places when their individual income is higher in the new locality.

**Box 1.1 Choice of mobility**

(1)  $(W_A + FR_A) \geq (W_B - \text{Cost of migration or social cost} + FR_B)$ : Gain respecting to equalization.

(2) If  $(W_A + FR_A) < (W_B - \text{Cost of migration or social cost} + FR_B)$  then immigrate from A to B.

*Where:*

$W$  is salary on the labor market and  $FR$  is fiscal residuum.

*Source: Dafflon (2009), translation.*

With  $W$  is defined as the salary on the labor market, A and B are two local collectivities, then the choice of mobility can be described in the box 1.1. In case that there is no migration cost, then equation (1) is verified by the sign «=», so that there exists a long-term migration equilibrium. An efficient allocation expects that marginal productivities of individuals on the labor market must be equilibrium since individual salaries are identical for both two employees with equal productivities ( $W_A = W_B$ ). It is clear that the equation is only satisfied if  $FR_s$  in both region are equal or zero, however this case is not evident in the reality. If the fiscal residuum in B is higher than in A, then such a gap will attract individual in the region A to immigrate to the region B. As a result, it would harm to the private allocative efficiency. In another case, with the effect on the salary, the labor force finds the wage as a reason to leave A, then arrive in B. Consequently, the equalization transfer would serve to equalize the fiscal residuum among both regions. Moreover, another problem is that the labor market is a national dimension in which there is no restraint to the movement of labor force, the compensation of equalization transfer is for the goal that the decision of mobility would be taken in respecting to the marginal productivities of labor and capital. It comes up with a case which is extreme rare in the public sector where there is no trade-off between goals of efficiency and equity and the two arguments reinforce to each other. Nevertheless, it should absolutely distinguish the situation where  $W_A \neq W_B$  for the individuals with identical productivities due to the fraction on the labor market, such a situation does not require necessarily any equalization. For Robin Boadway and Frank Flatters, the point of reference is always the unitary system. It means that the financial equalization is served for the objective to reestablish at the central level an equitable taxing and efficacy. We can deduce that examining the root of inefficiency and inequity is inspired by the side of decentralization (Robin Boadway *et al.*, 1998).

When a person moves from one region to another, there are some possible cost Robin Boadway (2003), Mansoorian and Myers (1993) that should endure such as economic cost of delocalization, social cost, changes of social place and school or certain effect of capitalization of property price. The fiscal residuum of destination region would be higher than the fiscal residuum of departure region plus the

immigration cost and capitalization. The impact of these factors would probably discourage the migration and also reduce the need for the equalization according to the argument of efficiency. The question now turns into the dynamic of the model. The analysis is only implied situation quasi equilibrium with modification of marginal values. However, the process to reach this situation is not possible to be explained clearly ex ant. That is why, in reality, the fiscal equalization really should respect the basic principles.

In absence of the application of the user-payer principle, the fiscal residuum in different regions of one federal country is neither identical nor equal to zero. The question is to know that if the equalization can be justified from the point view of migratory efficiency and to compensate these fiscal differences among regions, Robin Boadway and Frank Flatters studies lead to two conclusions:

- In a market economy of decentralized federation, the assumption that the immigration decision taken by individuals will lead to a situation of efficient allocation of labor across regions is actually in question not only because of the migration process is locally inefficient in the sense of satisfying the first-order social efficiency conditions but also globally inefficient;
- In a decentralized federation, the self-interested government of one region will react in order to match the requirements of their residents without taking into account the consequence on other regions. From the point of view of higher level of government, the self-interested behavior of subnational government will lead to inefficient or/and inequity.

Myers (1990) argues differently that for reaching to an optimal situation, it is not necessary for any intervention at the central level. In his model, economic rents are shared equally between individuals, so that local collectivities react in the strategic manner to maximize the welfare of their inhabitants. As following, Myers argued that local collectivities react to the differences of fiscal residuum and pay the transfers though voluntary collaboration with other local collectivities in order to

limit the migration. The voluntary transfers determine a Nash equilibrium of migration which is known as Pareto optimal.

### 1.2.2 On vertical and horizontal equity

In the 1960s, Richard Musgrave contested the necessity of such an equalization system for the same reason as James Buchanan: Equity. Firstly, the vertical equity and horizontal equity cannot be separated because the horizontal equity requires for the equal treatment of equals with regard to fiscality, while the vertical equity is based on ethic norm for the treatment of unequal. Secondly, Richard Musgrave argued that the first theoretical solution of James Buchanan by which the central government applies another progression of tax rate to discriminate vertically the equals is impractical. Put differently, it depends on the method which is used to measure the value of the local and federal public goods and service. More clearly, there exists some way to interpret of what is called as equity.

There are certain sound reasons to stress that the different layers of government should participate actively to implement a redistributive policy for the ethical fundamentals on behalf of their choice of certain economic justice. In this case, there is no objective reason to attribute to the central level or the regional level the predominance of this choice. In addition, if we admit that each level of government treat their residents equitably, the amount of fiscal treatment cannot be equal in term of monetary value. Return to this controversy, most recent, Richard Musgrave underline that there is no theoretical base which supports the predominant role of central government with regard to the choice of redistributive policy. James Buchanan completely agreed with Musgrave on the point that the redistribution between individuals or inter-individual redistribution should be attributed as a competence to the central entity.

#### 1.2.2.1 *Vertical and horizontal adjustments to the difference of fiscal residuum*

Face to such a situation of migratory inefficiencies and fiscal inequities as being presented in the above discussions, the higher level of government should intervene

by using some types of equalization transfers. For Robin Boadway and Frank Flatters, there are two possibilities to correct these fiscal residuum.

1. An adjustment of tax rate at the central level: These authors proposed a set of modification where the federal government can react on the formula of personal income tax, so that the fiscal residuum can be minimized. This adjustment consists of three main changes as following:
  - Deduction of local fiscal residuum of taxable income at the central level;
  - Discrimination of the central tax rate in taking account these fiscal residuum;
  - Application the different tax scale at the central level to the different regions following their fiscal residuum.
  
2. A financial equalization between regions with a higher fiscal residuum per inhabitant and regions with lower fiscal residuum. These authors admitted that the fiscal equalization is justified only on the fiscal equity between persons which is largely accepted, while the notion of fiscal equity between regions has not the justification itself. Nevertheless, these authors stated that:
  - The calculation of fiscal residuum is extremely difficult and costly even controversial. As a consequence, an aggregate at local level is easier to calculate and put in place for a practical solution;
  - An adjustment on the base of the tax is very difficult to apply because of a discretionary fiscal treatment to the contributor by the central level in diver regions and their residence would unavoidably violate the equality before the law as indicated in national constitutions;
  - The sovereign decision of local governments in applying a redistributive policy according to vertical and/or horizontal interpersonal transfer will equalize the fiscal residuum between their residents. Since the fiscal equity does not exist for putting an end to the fundamental of decentralized decision on the regional redistributive arrangement, it is enough to underline that the equalization improves potentially the position of individuals while

the local collectivities keep back their autonomy to realize or not this improvement. So that, equalization is neutral from this point of view and respects the autonomy of regions.

#### 1.2.2.2 *Fiscal equity in large sense and strict sense*

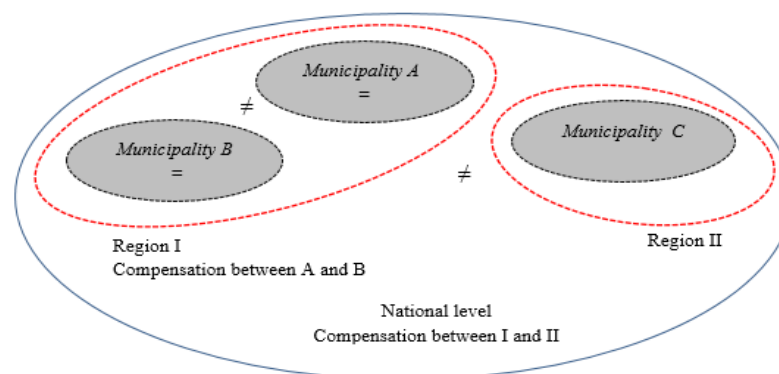
Beside above proposed solutions where the unitary system is served as a point of reference, Robin Boadway and Frank Flatters also clarify two concept of horizontal equity in large sense and strict sense under the context of fiscal federalism, particularly the reform of fiscal equalization in Canada.

If individual incomes are equals before imposition, they should be also equal after the fiscal treatment at the local, region, state, central and so on. The concept of the equity in large sense requires that each individual with the financially identical situation should be equally treated in term of fiscal residuum by all level of government. Taking an example of a federation with three level of governments, the extent of the reasoning for strict equity signified that individual are equal after the intervention of local level, they should also be equal after the intervention of the regional level, and then the central level”.

The equity in large sense is presented in graphic 1.1: Assuming a federation with three municipalities A, B, C where A and B belong to the region I and C to the region II. Given the municipalities A, B of the region I and the municipality C of the region II provide a package of «local public goods-taxes» resulting in the individual fiscal residuum  $FR^i$  which is different from one municipality to another and from one level of government to another. Considering a contributor type “i” who has the same economic capacity regardless he resides in A, B or C. If there is a difference on the fiscal and budget position of one economic agent residing in A to another economic agent residing in B (with the hypothesis that the place of work and residence overlap on the same municipality), this seem to be that the region I should make a compensation to equalize the difference of fiscal residuum in such a way that the fiscal residuum of the municipality A is equal to that of the municipality B. Likewise, taking into account the «local public goods + regional

public goods – tax paid to the local jurisdiction + region». If there are differences between residents with the same economic capacity with regard to fiscal residuum, the central government should make the compensation.

**Graphic 1.1 The horizontal equity in large sense**



If the fiscal residuum in A then the region I should compensate in such a way that the amounts are equal	$FR_A$	$>$	$FR_B$	$\neq$	$FR_C$
	$FR_I$	$<$	$FR^*_I$	$\neq$	$FR_{II}$
	$FR_I + FR_A$	$=$	$FR^*_I + FR_A$		
If fiscal residuum between regions are then, the central level should compensate in such a way that the additioned fiscal residuum are equal	$FR_{A+I}$	$=$	$FR_{B+*I}$	$\neq$	$FR_{C+II}$
	$FR_{central}$	$=$	$FR_{central}$	$>$ Or $<$	$FR^*_{central}$
	$FR_{A+I+central}$	$=$	$FR_{B+*I+central}$	$=$	$FR_{C+II+central}$

Source: Dafflon (2009), translation.

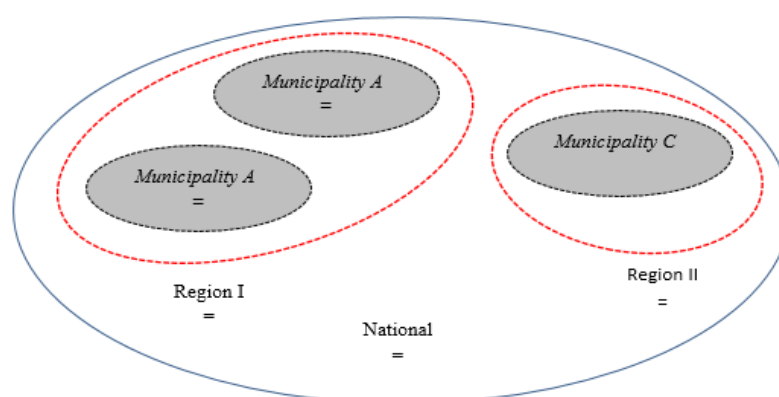
The equity in large sense is required to make certain equalization transfer in order to adjust the individual situations, so that the overlapping of different states «municipality + region + central» lead to a perfect horizontal equity between individuals. Tax contributors in the identical situation are found in the same situation after the intervention of three levels of government regardless their residential place.

In the case of equity in large sense, the stacking of individual horizontal equity is strictly respected at all levels of government depicting aggregated situations in



which the fiscal residuum is different. In other words, economic agents, before the intervention of higher public power, will be treated in an equal manner within the municipalities where they reside. In the municipality A of graphic 1.1 for example, the fiscal position for one resident in the municipality A may be different to another who would be found in B or C.

**Graphic 1.2 The horizontal equity in strict sense**



The local fiscal residuum in A	$FR_A$	$>$	$FR_B$	$\neq$	$FR_C$
then, add the regional fiscal residuum	$FR_I$	$=$	$FR_I$	$\neq$	$FR_{II}$
so additioned amounts are unequal	$FR_I + FR_A$	$>$	$FR_I + FR_B$		
and between regions	$FR_{A+I}$	$=$	$FR_{B+I}$	$\neq$	$FR_{II} + FR_C$
at the central level	$FR_{central}$	$=$	$FR_{central}$	$=$	$FR_{central}$
in such a way that	$FR_{A+I+central}$	$\neq$	$FR_{B+I+central}$	$=$	$FR_{C+II+central}$
additioned fiscal residuum are unequal					

Source: Dafflon (2009), translation.

Whereas, the equity in strict sense is that if the individuals having the identical economic capacity are equal after the tax intervention of the local level, they should be also be equal after intervention of regional level (Robin Boadway and Frank Flatters 1982a). As showed in graphic 1.2, in the same way of reasoning as in the case of equity in large sense, the region I and II implement equal treatment of equals, but the stacking is as following: «municipality A+ region I» does not necessarily lead to the same final result as in «municipality B + region I» or «municipality C + region II». At the federal level, equality of fiscal treatment to

contributors are initially «equals» registered strictly in the system «municipality + region + central», but not from one municipality to another or one region to another.

Now, we have understood effectively the two clear situations where the horizontal equity in large sense demands for certain equalization transfers, while equity in strict sense combines the stacked differences so that one scheme of equalization is not sufficient. The choice of these two concepts depends on the point of reference to judge the problem of horizontal fiscal equity. First of all, we need to know at what level to take action: Regional or federal level by which the equalization is operated through. If the concept of ethic is that the equal outcome regardless the place of residence, the equity in large sense serves as a measure. In the case that the place of residence is legitimate as a regional endowment, then fiscal residuum is equalized by the central. So that, some non-economic judgments are in need to answer these questions.

If local collectivities provide higher fiscal residuum to their inhabitants, they prefer surely the notion of horizontal equity in strict sense. Firstly, because they estimate that they have the property rights on these benefits due to their place of residence. Secondly, as they do not want to lose advantages of a favorable competition position to another local collectivities, so that they will estimate that the concept of equity in large sense destroy the incentive for improvements of local performance even if the favorable fiscal residuum that they get benefit due to the advantage of geographical location rather than their local choice or their efficient management of local public goods and services.

### *1.2.2.3 Some problems of different fiscal regimes in a federation*

The above discussion clarifies both concepts of horizontal equity in large and strict sense under assumption that tax contributors reside, work and pay tax in the same local collectivity. Now, another problem arises if we intend to specify that the local collectivities providing the local public goods and levying their tax where the beneficiaries and tax payers are not perfectly overlapped.

Does one particular contributor only draw benefit of local public goods and services which are provided by his municipality or his residential region? If the answer is negative, so does he pay also to the municipality or region providing him with benefit of their public goods? Or moreover, is the municipality's tax burden supported completely by their inhabitants or exported partially to another municipality or region? An example is that the Canton Geneva in Switzerland where inhabitants pay a half of their tax to the domicile municipality and a half to that of workplace: Does the contributor draws benefit exactly a half of public goods and service in the home municipality and a half in the municipality of workplace? If he answer is negative: There exists spillover effect or tax exportation. So, different fiscal systems in a country and even between municipalities in a specific region create serious problems requiring for fiscal equalization (Robin Boadway and Frank Flatters, 1982a). It has to come up with a question: Who takes benefit of local public goods and who effectively pay local tax to finance these public goods and service? Do local collectivities have capacity to export the fiscal burden? Under hypothesis that the fiscal system is redistributive, so it is necessary to distinguish between the taxing by principle of residence and original of revenue.

#### 1.2.2.3.1 Taxing by principle of residence

In a fiscal system where the tax is levied by the place of residence, inhabitant profits the public goods according to their paid tax. In general, there is not exportation of tax, such a system will lead following consequences on horizontal equity. The concept of horizontal equity demands an equalization of all fiscal residuum, so that the requirement for an equal equalization to the differences of all the fiscal residuum between equal individuals in the different local collectivities. In the situation of horizontal equity in strict sense, only the difference after intervention of local level is the object of equalization. But, there is only fiscal residuum which is created by the local collectivities, as a consequence, equalization is not necessary. Inhabitants of one collectivity finance completely the public goods and profit themselves these productions.

### 1.2.2.3.2 Taxing by principle of origin of income

When tax is levied by this principle, it is unavoidable that one person resides possibly in one collectivity but does not profit the public goods even he has to pay tax to finance them just as the particular case is the tax on income of foreign persons. Once again, we can pose the question what is the role of equalization in different concepts of equity. The taxing on original of income permits to levy tax on persons residing outside the local collectivity. Then, this exportation of tax permits the local collectivity an opportunity to provide higher fiscal residuum to their inhabitants. According to the notion of equity in large sense, public intervention has to be neutral for all level of government together. In order to apply this, an equalization of all of difference of fiscal residuum may be necessary.

Likewise, the notion of equity in strict sense demands a certain measure of equalization because collectivities which have the exportable taxes acquiring higher fiscal revenues in comparison to the collectivities which do not have such a taxing capacity. Applying this principle to the fiscal system create the external effect especially in a small geographically small collectivities. As a consequence, the collectivities with higher fiscal residuum will not interfere to the problem of exported taxes because such intervention may result in a political disadvantage to the local authorities. But inhabitants of other collectivities support the burden. This leads to an inequality which should be equalized by an equalization transfer in which the portion of exported taxes serve as the base of calculation resulting the amount of equalization. The table 1.3 sums up the problem relating this issue.

**Table 1.3 Need of equalization from the point of view on equity**

Equity	<i>Taxing by principle of residence</i>	<i>Taxing by principle Of original of income</i>
in large sense	Equalization of all fiscal residuum	Equalization of all fiscal residuum
In strict sense	No need for equalization	Equalization only the exported potion of income

*Source: Boadway and Flatters (1982a) adapted by Dafflon (2009), translation.*

### 1.2.3 On territorial spillover effects on the budget of the local jurisdictions

Under the decentralization in providing the local public goods and service, we recognize two types of territorial spillover effect deriving from the production and consumption of local public goods: The spillover of production appears when the production of local public goods in a particular region creating effect on adjacent regions, while the inhabitants of the later do not participate to the cost of production. Another case is the spillover of consumption in which the local public goods provided by one region may be consumed by inhabitant of adjacent regions who move to the region of provision in order to take advantage of public goods and services without paying or being excluded from consumption. These types of spillovers lead to a consequence on the budget and taxation of regional governments, equalization can therefore be justified.

In the case where the definitive mobility of individuals generates negative spillover effect on the budget of departure region. For a constant local budget, the individual fiscal burden in the region from which they quit will increase because there is one less tax contributor. Whereas, the individual fiscal burden of the region of destination to which the tax contributor come will decrease. Thus, there exists an external effect associated to the individual decision of migration. In reality, this effect is ignored by the individual economic agent who is only influenced by the differences between regions respecting to the average cost and benefit of public goods and service and do not taking in account the social marginal cost relating to their private decision. Consequently, basing on this argument, the equalization permits to internalize the external cost.

These circumstances lead to the following context: If the migration creates the territorial spillover effect, the destination region should restrain the coming of new inhabitants or apply a price discrimination between residents and new comers. If these two solutions are costly or impossible, an equalization transfer from the

destination region to the departure region should be set in operation because that the individual fiscal price decreases in the first and increases in the second.

In addition, there is another consequence arising from cost of spillover effect emerges. When the cost is created by spillover effect, the theoretical solution considers that the departure region is obligated to compensate the destination region for the cost of the new comers as a consequence of the migration movement. The departure region may refute that she has already supported a higher fiscal price for the reason that there is one less tax contributor. Moreover, because the tax payer has not belonged to their jurisdiction anymore, so there is no reason to require them for compensation of cost. Whereas, it should obligate the destination region support totally the cost of spillover effect. As a result, the problem passes from a geographic neutrality of equalization transfer to a concept of regional policy.

#### 1.2.4 Risk-sharing function

Most recently, the fiscal equalization is considered as an insurance proxy to stabilize the economic shocks which local collectivities endure during the spiral economic cycle. With the intergovernmental transfers, the local economy can absorb partially the negative consequence on their economic space. So the positive effect of transfer is significant to parry these shocks.

As the traditional economic theory explains that a local collectivity is specialize relatively in certain domain that are sensible to economics specific shocks of down turn or sectorial conjuncture. If the capital market is perfect, consumers can individually insure themselves against the shock touching their collectivities and negative effects lessening their income. The insurance market distributes the risks through the primes covering the eventual sinister, then this mechanism permits maintaining a level of comparable consummation over the country and timeline. When the risk is realized, insurance would sustain the insufficient income. If the market is incapable to insure this kind of risk, risk inverse individual cannot obtain

a higher utility. Then, the local collectivities can unit into one package so called risk pooling for the local risks.

In a monetary union where the price and the salary are relatively rigid and the productions factors are immobile. The intergovernmental transfers serve as an instrument of adjustment. In case of income shock, an individual collectivity as a member of union cannot depreciate the exchange rate to reestablish his competitive situation because of the absence of monetary instrument. The equalization can play a crucial role not only sustain partially the loss of income but also secure the basic public services of the local public sectors.

Some empirical researches such as Atkeson and Bayoumi (1993), Persson and Tabellini (1996), David Wildasin (1996), John Lockwood (1999) and Sam Bucovetsky (1998) analyze the role of intergovernmental transfer as a mechanism for risk sharing for macroeconomic policy in national or economic union space. The principal reason is that when the spatial shock occurs, it will results in a quick fall of economic activities, then regional income in certain sectors of regions. In this case, the financial aid insured by the equalization funds is vertically and horizontally transferred from the central government or/and from the regions of strong economic activities which are not touched by the shock toward the regions which are severely affected by the economic shock. In this sense, a group of measure in equalization transfer will serve to absorb partially the shock which is localized temporally or geographically. It should distinguish two arguments of macroeconomic stabilization based on the demand side theory of John Maynard Keynes. These equalization instruments is not for the objective of slipping the conjunctural cycle in all regions of the country, but to find out a mechanism to help the regions which support particularly a crisis or a brutal event because an economic shock spirals these regions to a difficult situation in comparison to the average situation of other regions at the same level. The same reasoning is also valid for the economic union including member states and a supranational government.

Usher (1977) was quite skeptic about the dimension of equalization in his advanced developments. The insurance mechanism implies that the present contributors would be the beneficiaries later. The example of Canada shows that there is not significant change in the relative positions of Canadian provinces over a longstanding equalization mechanism. Certain empirical evidences, for example Buettner (2002), von Hagen (2000) reveal that an assurance against spatial shock through equalization transfer is not evidently necessary. Moreover, local collectivities are better informed on what is concerned the demand and the cost of local public goods and services Lockwood (1999) in such a way that permit them to estimate the optimal transfer of equalization. The central level should take in account the information asymmetry which is the more and more integrated in theoretical analysis of equalization.

### 1.3 Other reasons which justifies the equalization

Besides the reasons used to justify equalization such as migratory movements, geographical equity, spillover effect and risk-sharing, there are other reasons which are most cited to advocate such an equalization transfer.

#### 1.3.1 Stability of a federation

It is certain that becoming a member of union forms certain advantage for collectivities as listed below:

- Economic gain in a free and common market where there is no barrier to the inter-trade of the union, free movement of labor force and goods and service in a federal state.
- Economy of scale for the pure public goods then the cost is decreasing with the number increase such as: National defend, foreign relationship, common security.
- Pooling the risk among the collective members which are heterogeneous



- Reinforce the negotiation position with others countries as the market is larger.

However, these advantages do not often lead to a Pareto improvement because some collectivities may lose some functions which should be centralized in the hand of federal state. The equalization can correspondingly function as an instrument to rebalance and to share the benefit among collectivities. This may felicitate the formation of a new federation, reinforce the old federation or experiment the federation by integrating the new problem such as migration as in above analysis in which the equalization serves equally a tool to limit the inefficient migration from the poor collectivities to the rich collectivities in foundation of federated states.

### 1.3.2 Nation, citizenship and regional economic convergence

Organization of federal system roots from the decentralization of reasonable assignment of power on spending, taxing and decision making among levels of government. Most of public domains should be found on the subsidiarity principle, except for certain limited domains are delegated to the central government such as national security and foreign affairs, others public domain should be decentralized to subnational governments. As a result, the diversity in providing local public goods and service is preserved to meet the local preference (Wallace Oates, 2011, p.36). Equalization mechanism could play a role in keeping the unity in diversity and preventing intergovernmental conflicts and secessionist movements.

When a territory or a country participates into a federation, the individual rights are guaranteed to all the citizens and the minimal standard of local public goods and services are ensured regardless the place of residence. The access to these local public goods and service is the most often classified in a dimension known as citizenship and not on economic term of the decentralization. Moreover, there is also a form of equity which is distinct from the equity of fiscal residuum, but equity as being human. So, financial equalization serves also for the objective where it sustains some basic public functions to secure the dignity of humanity.

The financial equalization is also important tool to facilitate the economic and social convergence between different regions or/and accelerate the speed of economic convergence in a federation. These transfers sometimes play a critical role to construct economic infrastructures through public investment. For example, the solidarity program of Germany which is used to assist five former East German Landers to catch up the development level of others Landers. Another case is the financial transfer through the structural funds of European Union, however, these funds is not organized to function with regard to the theory of equalization.

# Chapter 2 Fiscal equalization in Australia

## 2.1 Institutional arrangement of the Australian Federation

Australia is a special case of federation which is constructed on the base of the commonwealth system. After the period of British colonization, a new constitution has arranged Australia as a federation with six ex-colonized States and two Territories: Canberra known also as the Australian Capital Territory and Northern Territory are autonomous political entities whose powers are almost identical to others six States. There are seven small territories which also come under administration of federal government (the Commonwealth).

Australia is a constitutional monarchy because of the influence of former system which was imposed by England. Queen Elizabeth is also the Head of the State and Queen of Australia, her representation is expressed by the governor general at the Commonwealth and a governor in each State of Australia. However, effective executive power is vested in the government leader: The prime minister who is usually the leader of one specific political party or political majority coalition in the House of Representative at the federal parliament, is appointed by the governor general. Likewise, each of Australian state is headed by a state Premier who is appointed by the state Governor. The state Premier is the leader of executive branch at the state level.

Similarly other parliamentary systems, the Australian federal parliament consists of two houses, as do the parliaments of each State. Except for the Queensland Parliament which has only one House and there is no legislative council. Members of federal parliament are elected by universal suffrages within their electoral jurisdictions for both the representatives and senators. There is no state which has fewer than five representatives and the Constitution stipulates that the total number of representatives must double the number of senators. The Senate is composed of

12 senators per State and 2 per territory. Senators can use their power to veto with respect to the legislation adopted by the House of Representative. In case of persistent disagreement between the two houses, the executive branch may dissolve them.

The High Court of Australian consists of seven judges who are appointed by the federal cabinet. Their role is to settle constitutional disputes as a last resort. The federal legislation governing the High Court stipulates that the federal justice minister must consult his state counterpart before recommending court appointment.

## 2.2 Assignment of public functions in Australia

### 2.2.1 Assignment of competences

The Australian Constitution assigns a large and various exclusive domains to the Commonwealth including national defense, internal and external trade, foreign affairs, disability pensions, social security, unemployment insurance and family allowance. There are several domains in which the States serve as agencies to execute the federal policies so-called administrative decentralization. However, it also indicates certain areas where both the Commonwealth and States enjoy concurrent competences, although the Commonwealth has a dominant role over the states and territories. There are two domains where the Commonwealth and States enjoying a sharing of responsibility are healthcare and education. The federal government plays a key role in financing private hospitals, childcare, post-secondary education, waste collection, town planning.

The Constitution does not explicitly mention which function is assigned to the States. However, the *Section 107* of the Constitution grants the six former British colonies certain exclusive legislative competences over some areas which is not exclusively vested in the Parliament of the Commonwealth. In practice, the States

enjoy exclusive competences over public security, urban development, housing, transportation and public service.

There are about 561 local governments in Australia under different nominations such as cities, shires, towns, or municipalities. However, the Constitution does not assign any exclusive power to them. Local governments are therefore subject to the legislative control of States and Territories. In reality, local governments are responsible for the community facilities such as libraries, parks, local road, and childcare.

### 2.2.2 Taxing power

The Australian Constitution confers distinct legislative jurisdiction to the federal and states parliaments with respect to taxation. In the next step, the States delegate partially taxing power to the local governments. Australia is therefore characterized by a high level of fiscal centralization from the point view of constitutional arrangement.

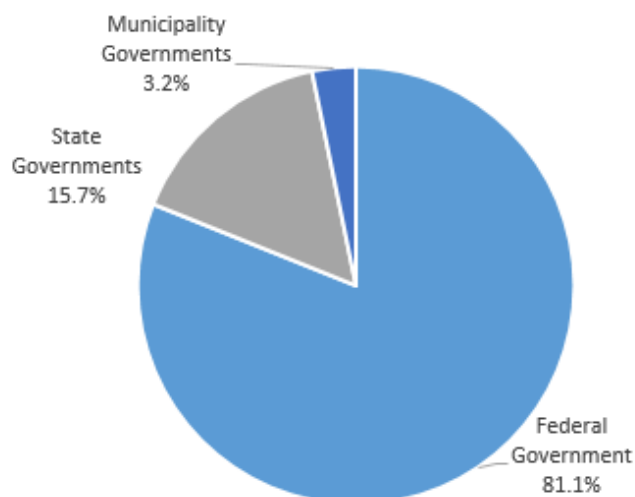
In 2013-2014, the general government revenue was around AUS\$ 540 billion in which the total portion of tax revenue raised by all three levels of government accounting for AUD\$ 433.8 billion or 26 percent of GDP. The graphic 2.1 shows that the federal government collected 81.1 percent, while the States and Municipalities collected respectively 15.7 and 3.2 percent of total tax revenue.

The federal government exercises exclusive control over certain important resources such as personal income tax, corporate income tax and goods and service tax (GST)<sup>2</sup>. Most of revenues are derived from personal income tax for 44 percent, corporate income tax for 21 percent, the third largest revenue is from GST which is served as the main source for equalization transfer to the States. For the States, tax on property is the largest resource making up to 38 percent of their own revenue, followed by the payroll tax with 31 percent. For the Municipalities, their only resource is tax on property.

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<sup>2</sup> GST means goods and services tax or sales tax in Australia

**Graphic 2.1 Tax revenue across three levels of governments in Australia**



*Source: Calculated by author from [www.abs.gov.au](http://www.abs.gov.au).*

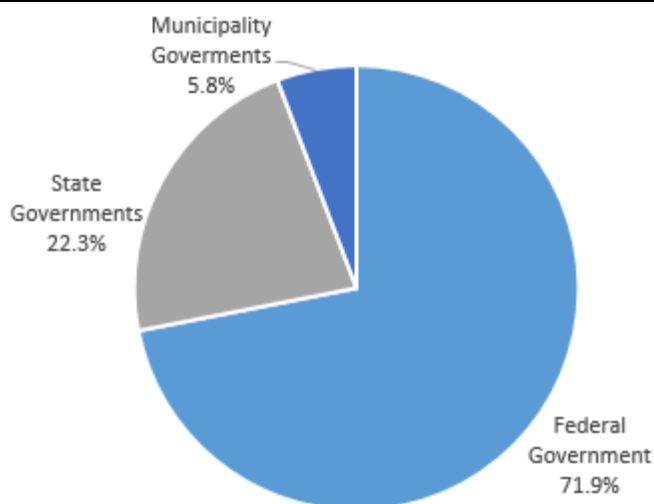
### 2.2.3 Spending power

In 2013-2014, the spending budget of three levels of government amounted to a total of AUD\$ 564 billion, including the inter-jurisdictional sector and social security expenditure. The graphic 2.2 shows the share of spending across three levels of government in which the budget of federal government, including the transfer to States and Municipalities but without the social security and welfare expenses, was around AUD\$ 406 billion or 71.9% of total public spending. The spending of States and Municipalities account for 22.3 and 5.8 respectively.

The largest portion of spending is allocated to social security which reaches to 38 percent or AUD\$ 155 billion of the total budget of federal government. The second largest part of the federal budget is used to fund the States and Territories through the horizontal equalization mechanism which amounts to 19 percent. The spending on healthcare remains at the third largest part accounting for 16 percent. The spending on other functions including public funding to agriculture-forestry-

fishery, mining-manufacturing-construction, transport and communication, economic affairs, housing-communities amenities and so on. For the States and Municipalities, the three categories of spending which absorbed most of their spending budget are: Healthcare for 30 percent, education for 24 percent and transport and communications for 12 percent<sup>3</sup>.

**Graphic 2.2 Breakdown of public spending in Australia**



*Source: Source: Calculated by author from [www.abs.gov.au](http://www.abs.gov.au).*

The fiscal arrangement in Australia creates a large vertical fiscal imbalance where there is a mismatch between the tax revenue of the federal government and its own expenditure. Consequently, States are heavily reliant on the transfers from the federal government. About 55 percent of state revenue is allocated from the federal budget: 32 percent is from the horizontal fiscal equalization and 23 percent is from specific purpose payment. In 2013-2014, the federal government collected about 81 percent of total revenue resource when its expenditure is at 52 percent. At the same time, the States and Municipalities collect about 19 percent of revenue resource while they are responsible for 48 percent of public expenditure. Thus, the horizontal equalization serves also as a mechanism to rebalance the vertical imbalance which is however not compatible to the theory of equalization.

<sup>3</sup> Consult more public spending statistics on [www.abs.gov.au](http://www.abs.gov.au).

## 2.3 Horizontal fiscal equalization in Australia

### 2.3.1 Early intergovernmental transfer

Ten years after the formation of the Australian Federation, the new federal government has decided to introduce some special financial grants to former colonies by admitting that they had weaker financial positions as components of the commonwealth. These provisions were included in the Surplus Revenue Act 1910 after a particular representation of Western Australia. As following the similar representation were made by Tasmania by which the newly established government obtaining passage of an Act to provide grant to this State as well. Consequently, during 1920s, South Australia jointed an appeal for a special grant from the Commonwealth.

This issue became controversial over several years in the midst of economic and trade depression 1930s. The Western Australia intended to hold a referendum in seceding from the federation for the reason that there was unfair financial treatment or discriminate the equal States. The Prime Minister Joe Lyons visited Western Australia in order to mobilize for a negative voting on the secession. At the same time, he promised to establish a commission to consider grant to States. As a result, the majority has voted for a government which was against secession. In response, the Prime Minister Lyons proceeded to establish a Commonwealth Grant Commission (CGC) in 1933.

### 2.3.2 Role of Commonwealth Grant Commission (CGC)

From 1930s to 1960s, the role of CGC was to recommend to the federal government the extent of small, special grants which could be made to Tasmania, Western Australia and Western Australia. In the late 1950s, Queensland also successfully argued to the case that this State should be eligible for a special grant. In the collective spheres, these States became known as «claimants» States. Western Australia was not anymore in «claimant» position in 1968 at the moment when



mineral booms started. Tasmania, South Australia and Queensland remained this situation until 1970.

From the historic point of view, Australian States remained strongly their fiscal autonomy as they levied its own resources and expenditures. The taxing power of federal government was introduced within the Second World War and became permanent. The payroll tax was introduced under the Menzies-Fadden government to finance the child endowment in 1941. In 1942, there were four Acts which have been passed through a voting at the federal parliament: The Income Tax Act, The Income Tax Assessment Act, The Income Tax and The State Grant.

The consequence of the first three Acts was to facilitate the transfer of income tax power from the States to the federal government. The last one was to regulate the grants by federal government to States. At the end of the war, there were some claims for the return of income tax power to the States, however, the Prime Minister Chifley refused as Kingsley Laffer pointed out «It followed from the High Court's unanimous declaration of the validity of the Income Tax Act and the Income Tax Assessment Act that even in peace-time the commonwealth can levy what rates of income tax it likes and that its collections have priority over state collections» (Laffer, 1942, cited in Wilkinton, 2003, p.9)

Faced to the States claims on their tax revenues, federal government introduced the new legislation to provide grants to compensate them for the loss of income tax by «States Grant» (Tax Reimbursement) Act 1946. In 1959, this grant to the States was renamed to «Financial Assistance Grants» (FAGs) under Menzies government. In 1970s, six states Premiers confronted the federal minister that they had certain difficulties over state revenue and argued to be able to levy income tax themselves, then presented with a manifesto entitled «The Financial Relationships of the Commonwealth and States». The Prime Minister Gorton refused to pay attention to the state reclamation, however, his successor William Mc Mahon was receptive, and then he decided to transfer the payroll tax to the State in 1971. In addition to this arrangement, the Commonwealth and States concluded an agreement in 1976

that there would be an assessment made of relative fiscal needs of all States. In 1977, both levels of Australian government agreed to that the review would be based on horizontal equalization principle. As a result, an agreement designated CGC to undertake the calculation of amount allocated to States in 1978. Under the proposal of the CGC, the Commonwealth government decided to shift from its intention of returning one-third of tax coefficient of federal personal income tax to transferring one-third of all tax revenues levied by federal government, including personal income tax, sales tax, customs duties and excise tax to States. This form of assistance amounted from AUD\$ 4.3 billion to AUD\$ 6.3 billion in 1980-1981, then increased further to AUD\$ 8.2 billion in 1981-1982 and to AUD\$ 9.2 billion in 1982-1983.

After being elected as prime minister in 1983, Malcolm Fraser decided to change the FAGs system back to the day where the States had its own income tax power as the colonies of Britain. Actually, Fraser intended to return one-third of federal income tax to the States. Even the next cabinet of Bob Hawke wanted to preserve this scheme, however, Peter Groenewegen noted «The May 1985, the Premiers conference abandoned this procedure... [and] restored the concept of financial assistance grant growing at a specified rate» (Wilkinson, 2003, p.4). The amount of financial assistance continued to increase even more over the time. In 1998-1999, this amount increased to AUD\$ 16.8 billion.

In 1999, with the difficulties of States over the issue of tax revenue and expenditure, the John Howard government introduced legislation entitled A New tax System providing both for the replacement of the federal wholesale tax by a good and service tax which was applied in July 2000 at a rate of 10 percent and a change to the previous system of federal financial assistance to the States. At the same period, the state Premiers came to conclude an Inter-government Agreement on The New Arrangement for Federal–State Financial Relations. With regard to the new scheme, the federal government provided no longer the financial assistance to the States as before, but a portion of federal revenue from GST which is now transferred to Australian States and there were 9 states taxes which were abandoned. The *Clause*

B2 of the Inter-government Agreement states that «The pool of funding to be distributed according to Horizontal Fiscal Equalization principles in a financial year will comprise GST revenue grants» (Treasury of New South Wales, 2000, cited in Wilkinton, 2003, p.5)

## 2.4 The present system of fiscal equalization

### 2.4.1 Principle of fiscal equalization in Australia

The Australian Constitution does not provide any arrangement for the fiscal equalization, the principle is nevertheless given by the Federal-State Relation Agreement (FSRA). In order to determine the amount of financial assistance grant to a State, the CGC attempted to determine whether one State suffered a disability in comparison to another State in providing public goods and services to its own citizens. In the Agreement 1981 concluded by the Federal-State relation committee of Victorian Parliament has described the disability as following:

«A factor...[that] require...[a state or territory government] to expend more or less than...[they] on average must spend, in order to achieve a particular object...or which reduce or increase ...[a state or territory government's] relative capacity to raise revenue from a given taxation effort» (Parliament of Victoria, 1998, cited in Wilkinton, 2003, p.6). Although this phrase was expressed in general sense, factors of disability would be taken into considerations to express the capacity of providing public goods and services to its own citizen within the states boundaries. Experts of CGC made it clearer by giving certain example of disability factors which endured in Northern Territory.

«[...] a population of only 170.000...quite evenly distributed over an area of 1.35 million square kilometers...one-quarter of population is indigenous Australian Aborigines. The cost of providing schools, areas and other services to Aboriginal settlement in remote...often semi-desert are very high...the territory's relative per

capita cost of service provision is nearly three times the average for the other States». (Richard Rye and Bob Searle, 1997 p. 158).

The two examples make the meaning for the disability proceeding from the social geographic condition: One causes excessive cost of providing local public goods and service that a State or Territory must endure, another is the shortfall of revenue which is engaged to cover the local expenditure. Evenly, the method of calculation and pool of factor have been changed and reviewed, the CGC point out the fiscal equalization in its report in 2015 as following:

«State governments should receive funding from the pool of goods and services tax revenue such that, after allowing for material factors affecting revenues and expenditures, each would have the fiscal capacity to provide services and the associated infrastructure at the same standard, if each made the same effort to raise revenue from its own sources and operated at the same level of efficiency».

*Commonwealth Grant Commission (2015)*

Previously, the CGC undertook a comprehensive review of its methods every five years (the latest review was published in 2004) and determined the amount of equalization transfer based on the five-year average relativity calculation. Since 2010, the CGC has move to the three-year average period, for example the proposal for transfer of 2015-2016 is based on the three-year average relativity calculation of 2013, 2014 and 2015. The CGC argued that the changing of average period allows to «better balance the competing needs of capturing current state circumstances and providing stability» (Australian Government, 2012, p. 34).

The CGC is designed as a dependent statutory advisory body and its members are appointed by the federal governments. CGC will choose social- geographic factors and natural factors which are outside the control of States. These factors may effect on the tax raising capacity, the expenditure and the cost function of States. Experts will qualify these factors which is used to figure out the amount that each State should receive and make the recommendations to the federal government. This

procedure makes the equalization system of Australia become unique due to the comprehensiveness on the international plan. As noted above that the equalization system of Australia is based on both assessment of fiscal capacity and expenditure need (or cost) for each State and the equalization payments are vertically and directly made by the Commonwealth government under proposal of the CGC and the Treasure of Australia to the States.

## 2.4.2 Formulas of fiscal equalization

### 2.4.2.1 *The process of calculating the relativities and GST distribution to the States*

Since 1981, in order to calculate the amount of GST's share to each State, the CGC has developed a complex method which results in a global index of fiscal capacity for each State. This index is named «relativity». The CGC defines the «relativity» as following:

«If States had the same economic, social and demographic features and Commonwealth payments were distributed uniformly among them, the commission would recommend that the GST be distributed equally per person. Each State would be allocated the same (average) amount per resident. However some States are fiscally stronger than others — they have stronger tax bases, lower service delivery costs or receive above average commonwealth grants which mean that they need less GST revenue than other States if all States are to be fiscally equal. That relative strength (or weakness) is measured by the State's need for GST revenue compared to the average and is summarized in its relativity. A stronger State might be assessed as needing only 90 percent of the average GST — its relativity would be 0.9. A weaker State might be assessed as needing 110 percent of the average, its relativity would be 1.1» (Commonwealth Grant Commission, 2015, p.33).

*At the first stage:* The calculation process of average relativity for each State proceed in four steps:

- The CGC will collect and examine the historical data from the general government statement of all States. The figures of each State will be

adjusted before summing up according to their expense, net investment, net lending, own revenues, and other transfers from the Commonwealth;

- The assessed budget of each State is calculated on how much more or less than the average each State would expense to provide the average service, invest to acquire the average stock of infrastructure, need to save to obtain the average stock of financial assets, raise their own revenue if it adopt the average tax policy and receive other transfers from the commonwealth. Consequently, a State's assessed budget is the sum of its assessed expense, assessed own revenue, assessed net investment, assessed net lending and assessed other transfer;
- Relativities are calculated by expressing each States assessed GST revenue requirement per capita as proportion of the average per capita GST for the year;
- The per capita relativity of one State is the result of dividing its per capita assessed GST revenue requirement to per capita GST.

The box 2.1 shows the mathematical presentation for calculation of relativities:

### **Box 2.1 The GST distribution model – A mathematical presentation**

The budget identity:

$$G_s + O_s + R_s - E_s - I_s = L_s \quad (3.1)$$

The adjusted budget:

$$G_s = E_s + I_s + L_s - R_s - O_s \quad (3.2)$$

The assessed GST revenue requirement:

$$AGSTRi = (Pi \frac{Es}{Ps} \gamma i + Pi \frac{Is}{Ps} \delta i + Pi \frac{Ls}{Ps} \epsilon i - Pi \frac{Rs}{Ps} \rho i - Oi) \quad (3.3)$$

The per capita relativity:

$$Fi = \frac{AGSTRi/Pi}{Gs/Ps} \quad (3.4)$$

Where:

- i, s        Subscripts used to denote an individual State (*i*) or all States (*s*);  
*P*         population;

(Continued)

$E, I, L, R$	Expense, net investment, net lending and own-source revenue respectively;
$\gamma, \delta, \varepsilon, \rho$	Assessed disability factors for expenses, net investment, net lending and own-source revenue respectively;
$G$	GST revenue;
$O$	Other Commonwealth payments. They are National Specific Purpose Payments (SPPs) and National Partnership Payments (NPPs) which the commission has decided should impact on relativities. They may also include Commonwealth own-purpose outlays which the commission treats as impacting on relativities.
$AGSTR$	Assessed GST revenue requirement. The commission's approach ensures States' assessed GST revenue requirement total to the GST revenue available ( $\sum_i AGST = G_s$ );
$F$	Assessed per capita relativity.

Source: Commonwealth Grant Commission (2014).

Where  $\frac{G_s}{P_s}$  is the average amount of GST revenue that each State would receive if they did not endure any disability, while  $\gamma_i, \delta_i, \varepsilon_i, \rho_i$  present, respectively, the «assessed disability factors» for expenses, net investment, net lending, and own-resource revenues of  $i^{th}$  State which are put in relation with the average expenses, average of net investment, average of net lending and average of own resource revenues of all States.  $O_i$  is the other transfer per capita that the  $i^{th}$  State received from the Commonwealth.

Two more important components  $P_i \frac{E_s}{P_s} \gamma_i$  and  $P_i \frac{R_s}{P_s} \rho_i$  are resulted from the calculation as following: Each expense/tax category is attributed to some disability factors so-called «category disabilities» which have an effect on the category in question. For example: The assessment of expense on secondary education is determined by assessed disability factors such as the lack of economy of scale, demographic and geographic factors and so on. Adding all the assessments of

expense category results the assessed expense. The same process is applied to determine other components.

The CGC determines independently which category and its disability factors will be integrated in the assessment of state's budget. Before the 2004 reform, there were 39 expenditure categories, most of them are divided into 171 components and 344 disabilities. CGC makes a choice on 13 different tax categories and 8 user-charge categories, some of them are divided in to subgroups extending to 29 sub categories in total. In 2010, CGC changed its method by taking into account of 7 categories of taxes and 13 sub categories. On the expense side, there were 12 expense categories, 43 components and 93 disabilities.

*At the second stage:* The CGC's recommended relativities are derived by averaging the relativities calculated for the most recent three years. Then, the average relativities will be put in relation with the national average and the total grant pool to result the share to each State. The total grant pool is fixed by the Commonwealth government on the annual basic and the transfer to each State is determined due to following mathematical formula.

$$G_i = \frac{F_i \times P_i}{\sum F_i \times P_i} \times \text{Total Grant Pool} \quad (3.5)$$

Where

$G_i$ : GST share to State  $i$

$F_i$ : Three year average relativity per capita of State  $i$

$P_i$ : Three year average population of State  $i$

$\sum F_i * P_i$ : The three year average relativity of  $F_i$  State multiply to its three year population  $P_i$ . There are 6 States and 2 Territories included in the calculation.

#### 2.4.2.2 Results of GST distribution

For 2015, the average GST revenue per capita is at AUD\$ 2 370, while the total assessment for each State varied largely from AUD\$ -1 656 (the sign « - » means the State require less) in Western Australia to AUD\$ 10 883 in Northern Territory.



Consequently, the GTS requirements differ widely from one State to another as being showed in the table 2.1. To be simple, I ignore other assessments and consider only two important assessments which contribute mainly to the fiscal disparity of GTS revenue requirements of States are revenue capacity assessment and expense needs assessment.

**Table 2.1 Budget assessment and GST revenue requirement-2015**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ave
	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc	\$pc
Average GST revenue	2'370	2'370	2'370	2'370	2'370	2'370	2'370	2'370	2'370
<i>Plus assessed differences in:</i>									
Expenses	-327	-803	329	856	179	1'016	-482	10'978	0
Investment	-70	-12	-5	384	-197	-370	-128	686	0
Net lending	11	-2	-4	-42	23	42	-1	-3	0
Revenue	213	560	-9	-2845	935	1'342	731	337	0
Transfers other than GST	57	10	-15	-8	-77	-73	127	-1'115	0
Total assessed differences	-116	-246	313	-1'656	863	1'958	248	10'883	0
Total	2'254	2'123	2'682	714	3'233	4'328	2'617	13'252	2'370

*Source: Commonwealth Grant Commission (2015).*

*Revenue capacity assessment:* Australian States are composed of jurisdictions with a large difference in revenue capacity. State's revenue capacity assessments range from AUD\$ 1 342 in Tasmania to AUD\$ 2 845 in Western Australia. It means that the State with lowest resource capacity is more than 2 times lower than the highest. The amount of tax on mining production reveals the main gap between States not only for the state endowment of natural resource but also on the production and exploitation cost. For example, the annual average spending related to mining such as road, service to industry, business development, regulation, protection of the environment and capital expense are included in the calculation. In general, Western Australia has a much strong mining production royalties amounting to AUD\$ 2 180 per capita (CGC, 2015, p.5). This resource may vary largely depending on the international price and the demand of each material. Recently, Western Australia claimed for a modification to revenue assessment concerning the

volatility of price as this State is crashed by the downturn of material price. Nevertheless, Western Australia also has a strong capacity to raise other taxes equally.

*Expense need assessment:* In 2015, the CGC include 13 categories of disability factor into the calculation, (CGC, 2015, p.5). The socio-demographic is the main source of a higher cost by which the first three sub-factors «remoteness», «regional cost» and «indigenous status» containing the largest amount of expenses, especially in Northern Territory because this State has a low level of population and 20 percent of indigenous population. That is why it has a GTS revenue requirement at AUD\$ 10 978 per capita which is 15.2 times higher than that of Western Australia. Although Western Australia has strong revenue capacity, the expenditure requirement of this State is also higher than national average because of its disability factor of wages cost and population growth.

**Table 2.2 Relativities, shares and GST distribution 2014-15 and 2015-16**

States and Territories	Relativities		Shares		GST distribution	
	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16
New South Wales	0.975	0.947	31.2	30.3	16'774	17'311
Victoria	0.883	0.893	20.0	22.3	11'828	12'755
Queensland	1.079	1.128	21.8	22.8	11'704	13'046
Western Australia	0.376	0.300	4.2	3.4	2'248	1'935
South Australia	1.288	1.359	9.2	9.7	4'955	5'525
Tasmania	1.635	1.819	3.6	3.9	1'914	2'236
Australian Capital Territory	1.236	1.100	2.0	1.8	1'097	1'040
Northern Territory	5.661	5.571	5.9	5.9	3'189	3'351
Total	1.000	1.000	100.0	100.0	53'710	57'200

*Source: Commonwealth Grant Commission (2015).*

The table 2.2 column (2) and (3) presents the relativities which are used to determine the GST distribution in 2014-15 and 2015-16. The amount allocated to each State reflects the difference of their fiscal capacity which is explained through the relativity per capita. The State whose relativity is higher than the national

average would be eligible to receive proportionally more transfer from the GST and vice versa for the State with lower relativity. Northern Territory has the highest relativity which is around 26 times higher than that of Western Australia. As a result, the former is eligible to receive 5.9 percent, meanwhile the latter receives 4.2 percent from the sharing of GST revenue. The three States receiving the largest amounts are New South Wales at 31.2 percent, Victoria at 22 percent and Queensland at 21.8 percent from the sharing of GST revenue. In terms of transfer per capita, Northern Territory receives the highest share of GST, because this State has a low level of population in comparison to other States.

Around AUD\$ 57 billion are allocated through the horizontal fiscal mechanism which accounts for 50 percent of total intergovernmental transfer from Commonwealth to States, 30-70 percent of state budgets is discharged by the transfer.

## 2.5 The performance of Australian equalization

One way to view the performance of Australian fiscal equalization is that to calculate the net transfer per capita after the equalization taking effect. In the table 2.3, the first column presents the shares of state entitlement in respect to their relativities, the second column presents the shares to each State on the equal per capita base. The difference between two amounts reveals whether one State is net contributor or beneficiary of the equalization. For 2014, around AUS\$ 5.6 billion of GST entitlement is redistributed among States, the three net contributive States are New South Wales, Victoria and Western Australia contributing respectively around AUD\$ 48, AUD\$ 257 and AUD\$ 1 407 per capita. Whereas, there are five net beneficiary States in which Northern Territory receives around AUD\$ 10 495 per capita, Tasmania receives AUD\$ 1 551 and South Australia receives AUD\$ 633.

There is a persistent disparity in terms of fiscal capacity between Australian States on both the revenue raising capacity and expense needs. The objective of

equalization system is to focus on reducing the fiscal gaps between States after the equalization taking effect. In measuring the effect of fiscal equalization, Hansjörg Blöchliger (2014, p. 8) has used the Gini coefficient of tax-raising capacity before and after equalization. According to his result, the Gini coefficient before equalization is 0.05 (2005) and 0.07 (2012) are reduced to zero after the equalization. It means that revenue raising disparity is virtually eliminated. Put differently, the capacity of providing public goods and service is equally distributed across Australian States due to the effect of equalization transfer.

**Table 2.3 Net GST distribution per capita-2015**

	GST distribution 2014-15 budget \$million	Equal per capital distribution of GST \$million	Redistribution \$million	Projected population '000	Per capita Redistribution \$
NSW	16'758.1	17'119.5	-351.5	7'567	-47.8
VIC	11'828.4	13'345.2	-1'516.8	5'899	-257.2
QLD	11'735.7	10'835.6	900.0	4'789	187.9
WA	2'255.3	5'970.0	-3'714.7	2'639	-1'407.8
SA	4'956.3	3'832.7	1'123.6	1'694	663.3
TAS	1'911.4	1'164.5	746.9	515	1'451.1
ACT	1'098.6	885.3	213.3	391	545.1
NT	3'166.4	557.1	2'609.0	246	10'595.4
Total	53'710.0	557.0	5'593.0		23'740

*Source: Minister for Finance of the Commonwealth of Australia (2014).*

The ratio of highest to lowest tax-raising capacity is equal to 1 after the equalization for 2005 and 2012, while these ratios are 4.8 (2005) and 7.5 (2012) before the equalization. The proportion of GST redistributed to five States which are below that national average has increased considerably from 2000 to 2015. The four less populous States having 12 percent of Australia's population receive about 21 percent of the GST, meanwhile the distributed amount to State with strong fiscal capacities has decreased over time (CGC, 2015, p.123). The annual amounts of transfer reflect the variations of relativity between States from year to year. In spite of a full equalization system, the evolution of relativities is increasingly diverse

according to mainly the revenue raising capacity and expense needs. As a consequence, a larger disparity of fiscal capacity requires for increasing amount of the equalization.

## 2.6 Conclusion

The complexity of the formulas does not ensure its efficiency over the simple formulas, furthermore this characteristic make the calculation difficult to understand by the voters as the main contributor to tax revenues. So that, applying some simple formulas may be a better response. Recently, the CGC is on the way to change certain elements in their formulas in order to make the calculation process more transparent and accountability.

The process of budget assessment is highly complex, imprecise and subjective, particularly on the expense need assessment which is based on judgments rather than econometric estimation, likewise, the revenue assessment uses the national average rather than a predetermined benchmarking. Anwar Shah (2006, p. 29) argued on the trade-off between efficiency and horizontal equity in the Australian equalization that «If a rich State decides to send a man to the mars or pave its roads with gold or buy limousines for its officials. Why should equalization payments go up». Thus, he concludes that it is more desirable that the equalization should focus on a few merit goods.

The CGC is established in order to make the calculation of equalization transfer. This institution is, however, expensive with an annual budget of AUD\$ 6.5 million and 42 staff, the annual rapport of CGC consist of more than 2000 pages presenting how the process work, qualifying factors, judgment (Stephen Kirchner, 2013, p.29). A huge resource is allocated to this commission, meanwhile it does not make sure that it is more efficient than other system where a temporary group of experts is engaged just for a period to make the calculation.

# Chapter 3 Fiscal equalization in Germany

## 3.1 Institutional arrangement of the German Federal Republic

After the French Revolution and the end of Napoleonic Wars (1803-1815) The German Confederation (*Deutscher Bund*) is established as a loose association of 39 States for the objective of coordinating their economies. However, this confederation collapsed under obstacle of nationalist trend, the 1948 revolution and the rivalry between Prussia and Austria. As consequence, another association was formed in 1866 known as North German Confederation with 22 independent States under leadership of Prussia. It was the first modern German nation State which was the base for the German Empire (1871-1918).

Although the Prime Minister Otto von Bismarck has established the system of social security since 1881, there was no clear fact about the intergovernmental fiscal transfer in Germany for the first half of 20<sup>th</sup> century. Under the regime Nazi, the Germany became a strongly centralized state and the parliaments of German Landers were replaced by Nazi governors. At the end of the Second World War, Germany was divided into two countries with separated political regime. However, the modern public finance including the fiscal equalization was built in West Germany with 11 Landers and a population of 63 million in 1990. After the unification, new five States of East Germany were integrated to the Federal Republic of Germany, then the fiscal equalization now covered over 16 Landers.

Modern Germany is a federation with 16 constituent States known also as Landers. German territory covers a large surface of 357.000 square kilometers with a population of more than 80 million and a density of 226 people per square kilometer. The federal parliament consists of two houses, namely the Bundestag and the Bundesrat. Members of the Bundestag are directly elected every four years and represent the people, while members of the Bundesrat represent the Landers.

The federal state is under leadership of the president, while the Federal Chancellor heads the government and is also the leader of the executive power. Each Lander has a parliament with only one chamber. Half of members of Bundestag are elected directly from constituencies under the system so-called «First past the post system». Another half is elected from the list of landers political parties in such a way as to achieve proportional representation. According to the *Article 51* of the Basic Law, the Bundesrat shall consist of members of lander governments: Ministers, permanent secretaries and heads of government. The Bundesrat plays a key role in the highly interlocked relations between the two houses of the government in Germany.

Legislative initiative is vested in the federal government and the two houses of parliament. For a change to the Basic Law (known also as the German Constitution), it needs to be approved by the Bundesrat. Any law that affect the Lander's interest also requires an approval from the Bundesrat. There are certain specific legislative matters requiring an approval of Bundestag are identified in the Basic Law. For other legislations, the Bundesrat can make a veto over bills by a majority voting. However, this majority voting can be valid only by an equal majority, for example: If the veto rate is at two-thirds of Bundesrat's votes, the Bundestag need to get at least two-thirds vote to override the veto.

The Bundestag has the right to be informed of the affaires of the federation from the government and the Bundestag through ministries and other bodies. The Bundesrat also has the right of review over foreign affairs and affairs of the European Union since its approval is required to pass resolutions relating to these fields.

## 3.2 Assignment of public functions in Germany

### 3.2.1 Assignment of competences

German federalism is a type of executive federalism with a centralized legislation and a decentralized execution and administration at Landers and Municipalities. According to the 1949 Basic Law, the federal government has an explicit list of exclusive public domains and of domains shared with the Landers. The Basic Law also designates the federal power to provide framework legislation in some fields and give considerable importance to decentralized administration of federal laws. As following, the federal government has a large legislative authority, while the landers and Municipalities are generally responsible for the implementation and administration policies. In accordance with this principle of responsibility sharing, Landers administer and execute around 75 percent of federal laws, including the federal laws on the collection of main taxes such as TVA, corporate and personal income tax.

The Basic Law assigns the federal government exclusive power over: Foreign affairs, national defense, citizenship, immigration, currency printing (already assigned to the European Central Bank), the air transport, postal system and telecommunication. In addition, the federal government has also the priority over twenty fields including civil law, criminal law and highways. The Landers have their power over culture, healthcare, education, public order, environmental protection and regional development policy. Municipalities, as a part of Landers, are protected by *Article 28* of the Basic Law which grants them self-administration and financial autonomy on various local public goods and services such as local healthcare facilities, school building, public housing and local roads and other local services (Laufer, (1994), cited in Roden, 2003, p. 8 ).

The amendment of German Basic Law in 1969 has thoroughly reformed the German fiscal federalism. This constitutional change mainly concerned «joint tasks» between the federal government and Landers and it was an important step which turns Germany from «dual federalism» to «cooperative federalism». As a result, Landers have accepted to give up certain exclusive fields in exchange for a complex form of multi-level cooperation in policy formation and financing. These fields are stipulated in the *Article 91a* of the Basic Law, including university



constructions, regional industrial policy and agricultural policy. Other fields are also shifted to shared status such as housing, urban renewal, urban transportation and hospitals (*Article 104a*), secondary education and research financing (*Article 91b*). The financial impact of the reform led to a higher level of intergovernmental interconnection of co-financing activities, then the federal expenditure devoted to joint tasks increases by 15 percent (OECD, 1998, cited in Roden, 2003, p. 8).

### 3.2.2 Taxing power

Under present tax assignment, each level of government has its own exclusive and shared access to taxes as the table 3.1 shows.

**Table 3.1 Assignment of taxing competence**

Federation	Excise taxes, tax on insurances, motor vehicle, air traffic, nuclear plants, and solidarity surcharge tax.
Landers	Inheritances tax, land acquisition tax, tax on lotteries, fire protection tax, and beer tax.
Municipalities	Property taxes (A: agricultural and B: all others), trade tax (minus apportionment and, (minor) local consumption taxes
Shared taxes	Personal income tax, corporate tax, VAT/Turnover tax and capital gain tax

*Source: Färber (2013).*

The Basic Law provides explicitly three lists of taxes which are attributed to three levels of government: Federal, Landers and Municipalities. It also sets out clear rules for sharing of personal income tax (PIT), corporate tax, capital gain tax and VAT three levels according to following rules

- In 2012, an amount of 15 percent of the personal income tax (according to the place of residence) is allocated to Municipalities, while the federal government and Landers share the rest with 42.5 percent for each level

- Federal government and Landers share the corporate income tax equally (according to the location of the head operation or distribution office of the corporation)
- For the capital gains tax, a total of € 8.2 billion is shared to 3 levels : 44 percent to federation, 44 percent to Landers and 12 percent to Municipalities
- Revenue from the VAT/turnover tax is also shared between the federal government and the Landers, However, a federal law must be drafted and require an approval from the Bundesrat to determine the rules of sharing. These rules are revised over time and may be modified under the bargaining between two levels of government. In 1970-1971, the VAT distribution was 70 percent for the Bund and 30 percent for Landers. From 1972-1990, the distribution of VAT remained stable where it varied from 65 to 69 percent and 34 to 37 percent. From 1998-1999 the distribution is about 50.5 percent and 49.5 percent. In recent years, the VAT distribution is around 50 percent for each one. In 2012, about € 195 billion of VAT revenue is share to three level where 2.2 percent to Municipalities, the remainder is shared at 50.32 percent to Landers and 49.68 percent to the federal government (Lenk, 1999 and Finanzbericht, 1999, cited in Guihéry, 2001).

The details of revenue sharing is figured out in the table 3.2:

**Table 3.2 Tax sharing three layers of government**

Tax revenues in 2012				
Billion €	Tax	Bund	Lander	Municipalities
206.4	Personal income tax	42.5%	42.5%	15%
16.9	Corporate income tax	50%	50%	
8.2	Capital gains tax	44%	44%	12%
194.6	Turnover tax	3.68+5.15% 49.68	50.32%	2.2%

*Source: Färber (2013).*

These shared taxes are collected by Landers on behalf of the Bund. As following, the shared amounts will be returned to the Landers according to the rules of sharing. Another remark is that, there are two taxes which are collected and remitted to the federal government: One is the custom duty which is later forwarded to the European Union, one another is duty on beer which will be paid in full to the Landers.

Other taxes such as excise taxes are set and collected by the federal government, meanwhile Landers have exclusive power to set and collect taxes on gambling and gaming, real estate taxes, taxes on real estate transaction and taxes on motor vehicles. Municipalities are allowed to access to property tax, trade tax and dog tax where revenue from property tax is most important resource. Prior to 1998, this tax had two components, one of them has now been abolished, namely the former local tax on ownership of corporations and has been replaced by the share of VAT revenue from the Bund.

### 3.2.3 Spending power

Previously, the Bundesrat had considerable influence the laws in various domains. After the 2006 reform, its influence is restrained to certain domains. However, the Bundesrat still has an influence on the laws that affect their interest with regard to lander finances. In this sense, a federal bill related to the taxing and spending to Landers require a consent of Bundesrat for approval.<sup>4</sup>

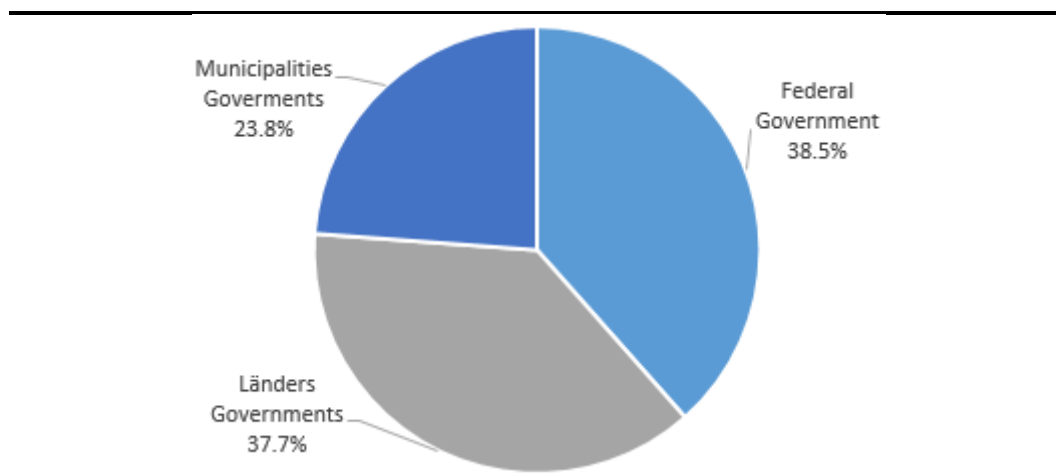
In the case of spending power, there is a high degree of overlapping functional distribution over three levels of government. As a consequence, there is not reliable indicator to classify the actual spending amount of each level. However, the general public expenditure of three levels (without social insurance) account for € 870 billion. The graphic 3.1 shows that the federal government contributes to 38.5 percent of the total expenditure, Landers and Municipalities to 37.7 and 23.8 percent respectively. Besides, € 534 billion is allocated to social insurance and € 30

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<sup>4</sup> See the *Article 104a*, Subsection 3 and *Article 105*, Subsection 4 of the Basic Law.

billion to European Union. In total, the German expenditure budget amounted to € 1 208 million.

**Graphic 3.1 Breakdown of public expenditure in Germany**



Source: Source: Calculated by author from [www.destatis.de](http://www.destatis.de).

### 3.3 Former fiscal equalization in West Germany

The *Article 107* of the Basic Law provides grounds of horizontal fiscal equalization mechanism between Landers. This constitutional arrangement includes a horizontal transfer mechanism as well as tax sharing rule for the objective of fiscal equalization. Other directive laws regulating these arrangements were also passed at the Federal Republic of West Germany in 1969 and 1977. The Basic Law of West Germany provides as following:

«A federal law requiring the consent of the Bundesrat shall ensure a reasonable financial equalization between financially strong Landers and financially weak Landers, due account being taken of financial capacity and requirements of communes»

*Article 107(2), the 1969 West German Basic Law.*

There were two fiscal equalization programs in West Germany: One was horizontal equalization which was used to make the financial transfer from financially strong

Landers to financial weak Landers respecting to the difference between tax potential indicator and the «expenditure need indicator». Another one was vertical transfer by which the federal government used to distribute additionally the value-added tax (VAT or turnover tax) to the financially weak Landers.

### 3.3.1 Fiscal equalization between West German Landers

#### *3.3.1.1 Calculation of tax potential indicator*

The tax potential indicator of each Lander is the sum of the lander tax potential and plus 50 percent of tax potential of its local jurisdictions. Two components are calculated separately by both level of government before taking together, however, only lander budgets is taken into account as the reference base for equalization.

First, the Lander's share of personal income tax, the business tax and real estate tax are summed up, then subtract the result to special burdens. The business tax and the real estate tax on agriculture are calculated by applying a standardized rate to the actual tax base, while the real estate tax on non-agricultural property is treated differently. Second, 50 percent of the Municipalities' tax potential is added to the Lander's tax potential. The process of calculation would be easier if the payroll tax was not levied by some Municipalities. This will lead to an error of calculation as the Municipality where payroll taxes are levied would be better off in equalization transfer if they abolish this tax.

#### *3.3.1.2 Calculation of expenditure needs indicator*

In West Germany, the calculation of expenditure needs is based on the average nationwide tax revenue per capita. This seems to be reasonable because the tax revenue of all Landers and Municipalities sustain their actual expenditures. Put in other words, because the amount of taxing is equal to that of spending on an average per capita basis, even though the actual tax revenue per capita varies considerably from one Lander to another.

In the process of calculating expenditure needs, there are many types of burdens are taken into consideration. However, there are only two important modifications (see table 3.3 and 3.4) of average per capita figure are used at the Lander level. The expenditure needs figures are calculated separately for the Landers and the Municipalities as far as they are included.

**Table 3.3 Adjustment for local population size**

Population size	Weight (percent)
First 5 000 inhabitant	100
Next 15 000 inhabitants	110
Next 80 000 inhabitants	125
Next 400 000 inhabitants	120
Next 500 000 inhabitants	120
Next inhabitants	230

*Source: Advisory Commission on Inter-governmental Relations (1981).*

**Table 3.4 Adjustment for population density** (This procedure is applied to large Municipalities where their populations are 500.000 inhabitants)

Density	Adjustment (increasing of population in percent)
1 500-2 000 inhabitants/km <sup>2</sup>	2 percent
2 000-3 000 inhabitants/km <sup>2</sup>	4 percent
>3000 inhabitants/km <sup>2</sup>	6 percent

*Source: Advisory Commission on Inter-governmental Relations (1981).*

The difference between the tax potential indicator and the expenditure need indicator presents the financial position of each Lander which is confirmed by «deficit» or «surplus» Lander. The group of surplus Landers (financially strong Landers) will finance the group of deficit Landers in such a way that allows the later to raise their revenue potentials up to 92 percent of the national average. In

1976, there were six financially strong Landers which financed five financially weak Landers with a total amount of DMs 448 million (Advisory Commission on intergovernmental relation, 1981, p. 40).

This horizontal equalization leads to a large movement of budget between Landers, this would lead to political difficulties and disputes because each Lander tries to add more reason to renegotiate its position. Put differently, the Landers so-called «losers» of this mechanism would argue to pay less to the equalization fund, while the «winners» react in such a way to get more for giving more «special burdens» in their budgets.

### 3.3.2 Distribution of VAT/Turnover tax

Another mechanism of fiscal equalization is the distribution of the value add tax (VAT) between Landers in West Germany. The *Article 107* of the Basic Law provided that 75 percent of VAT is distributed to all Landers according to their population shares, another 25 percent is allocated to Landers in an equalizing way. This kind of equalization procedure uses two following steps

- Those Landers whose tax revenues from its own resource, (without net VAT share) lies below the national average, will receive sufficient receipts from the net VAT in such a way that brings them up to 92 percent of the national average.
- The remaining part of the 25 percent fund is distributed to Landers with weak tax potential. If tax revenues of any one of these Landers (including net VAT share) are still under average of all states, this difference should be equalized by taking sufficient amount from other Landers of the same group.

Beyond the two mechanisms as being discussed on previous section, the Basic Law also provide background for the federal government. The Federal government may give additional amounts which are agreed upon a process of negotiation between

the federal government and the particular Landers for the objective of adjusting the VAT share. In 1976, there were five Landers: Bavaria, Schleswig-Holstein, Rhineland- Palatinate, Lower Saxony and Saarland which have accessed to such payment (Advisory Commission on intergovernmental relation, 1981, p. 40).

### 3.4 The present system of fiscal equalization

#### 3.4.1 New conditions and three stages of fiscal equalization in Germany

Over the two last decades of 20<sup>th</sup> century, intergovernmental fiscal relation has largely changed under certain new conditions: German unification and European integration that influence on the institutional rearrangement in Germany. The German unification has integrated five East German Landers with an area 108.000 square kilometers and a population of 16 million. On the other hand, there are some new types of jurisdictions such as cities, towns, local associations. The European integration process lead to form new supranational institutions that require the public resource in order to meet common issues. In addition, European membership requires the public debt and deficit criteria to be respected.

Consequently, the fiscal equalization should be reformed in order to adapt to new requirements. The modification of the Basic Law has encouraged not only the equalization among Landers but also the creating of local cooperation and associations. There are increasingly landers which implement equalization mechanism for Municipalities within their boundaries and components of formula-based equalization is largely different from one Lander to another. *Article 107* is now modified as following:

«Such law shall ensure a reasonable equalization of the disparate financial capacities of the Lander, with due regard for the financial capacities and needs of Municipalities (associations of Municipalities). It shall specify the conditions governing the claims of Lander entitled to equalization payments and the liabilities of Lander required to make them as well as the criteria for determining the amounts



of such payments. It may also provide for grants to be made by the Federation to financially weak Lander from its own funds to assist them in meeting their general financial needs (supplementary grants) ».

*Article 107, the 2006 German Basic Law.*

Following to the tax revenue's sharing as being discussed in the section 3.2.2, the fiscal equalization with formula-based fiscal equalization mechanism is in operation. The German fiscal equalization consist of three-stage process as following:

At the first stage, the Landers' share of total national VAT revenues will be reallocated among them: 75 percent of VAT revenue share is distributed among them on a per capita basic. The remaining 25 percent is transferred to Landers with initial tax revenue per capita lower than the national average. It should be remarked that the tax revenues taken into calculation including all pure Lander's taxes, Lander's share of personal income tax and corporate income tax.

At the second stage, the horizontal fiscal equalization is applied where the financial strength index and equalization index<sup>5</sup> are calculated for each lander. The special burden is now excluded from the tax potential after the reform in 2001. The financial strength index is the sum of Lander tax revenues from personal income tax, corporate tax, royalties, VAT (including the amount of VAT transfer of first stage) and other Lander taxes plus 64 percent of Municipalities taxes collected on a Lander's boundary. The same formula is used to the equalization index, the difference is that the population coefficients will be assigned to both component of the formula. Taking together the financial strength index and the equalization index to determine where a Lander is the contributor or beneficiary of horizontal transfer. Landers with low financial strength index will receive payment in such a way that allows them to reach to at least 97 percent of federal average per-capita tax revenues.

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<sup>5</sup> Buettner T. (2006, p.220) use two term «Fiscal capacity» and «Fiscal needs» in place.

Finally, the federal government provides supplementary grants to the Landers with low financial strength index in order to reduce further the difference of financial strength per capita. In general, these transfers are allocated through two types: One is general supplementary grant and another is federal special grant which are used to fund for special needs and the financially weak Landers. Before the German unification, the fund for this kind of transfer was capped at 2 percent of total VAT revenue. After the unification and especially after the 1995 reform, the cap has been released. This payment plays an important role in increasing the fiscal resource for the five new Landers (Pitlik and Schmid, 2000). Furthermore, the supplementary grant targeting not only five East German Landers but also small Landers such as Bremen and Saarland which face to the difficulties in shifting from the old to new equalization mechanism.

### 3.4.2 Formulas of fiscal equalization

#### 3.4.2.1 *Additional share of VAT/Turnover tax (Ergänzungsanteile)*

The remaining 25 percent of VAT is allocated to the Landers whose resources from income tax, corporate tax and other Lander's taxes per capita are below the national average. The amount which is distributed to beneficiary Landers is called additional share (Ergänzungsanteile). Beneficiary Landers will be classified to two subgroups according to whether their revenues is lower than 97 percent or lie between 97 percent and 100 percent of the national average. Consequently, the allocation formula is modified with respect to the group to which the beneficiary Lander belongs. The transfer of additional share of VAT is vertically and directly made from the federal government to beneficiary Landers.

The result of additional share of VAT is showed in the table 3.5. The column (3) presents the revenue index per inhabitant. In 2013, an amount of € 80 billion are allocated to Landers in which € 10 billion is used for additional share to eleven Landers while € 70 billion are shared between Landers according to lander population shares.

Under the present rule, the total amount of additional VAT share should not exceed 25 percent of VAT share to Landers, if it is the case, the excessive amount will be proportionally reduced according to each beneficiary Lander. The column (6) shows that, the allocated amount is about 12 percent of VAT share.

**Table 3.5 Additional share of VAT**

Land	Additional share of VAT			Entitlement to the additional share of VAT (Yes or No)	Distribution proportional to population		Total allocated amounts (*1000 euro)	
	Revenues (*1000 euro)	Revenues per inhabitant (euro)	Revenues index per inhabitant (Average =100)		allocated amounts (*1000 euro)	Population		allocated amounts (*1000 euro)
NW	23'488'028	1'315.81	100.50	No	0	17'850'560	15'393'014	15'393'014
BY	21'197'350	1'693.20	129.33	No	0	12'519'130	10'795'580	10'795'580
BW	16'495'969	1'534.52	117.21	No	0	10'749'924	9'269'946	9'269'946
NI	8'898'695	1'121.83	85.69	Yes	1'357'667	7'932'282	6'840'219	8'197'886
HE	10'114'447	1'667.98	127.40	No	0	6'063'885	5'229'050	5'229'050
SN	2'737'375	6'59.03	50.34	Yes	2'537'114	4'153'631	3'581'787	6'118'901
RP	5'111'201	1'275.57	97.43	Yes	101'167	4'006'995	3'455'339	3'556'506
ST	1'483'533	632.72	48.33	Yes	1'490'773	2'344'679	2'021'879	3'512'652
SL	3'461'707	1'222.63	93.39	Yes	213'488	2'831'364	2'441'561	2'655'049
TH	1'427'639	637.01	48.66	Yes	1'415'827	2'241'157	1'932'610	3'348'437
BB	2'030'142	809.58	61.84	Yes	1'173'078	2'507'654	2'162'417	3'335'495
MV	1'056'519	641.66	49.01	Yes	1'032'909	1'646'539	1'419'855	2'452'764
SL	1'063'211	1'042.55	79.63	Yes	251'357	1'019'815	879'414	1'130'771
BE	3'976'339	1'154.44	88.18	Yes	482'851	3'444'400	2'970'198	3'453'049
HH	3'667'583	2'061.44	157.45	No	0	1'779'140	1'534'200	1'534'200
HB	821'046	1'244.84	95.08	Yes	35'816	659'561	568'757	604'573
Total	107'030'784				10'092'047	81'750'716	70'495'826	80'587'873
Ave.		1 309.23	100.0					

Source: Vandernoot (2014).

#### 3.4.2.2 Horizontal equalization among Landers (Finanzausgleich)

For this equalization program, the financially strong Landers will finance the financially weak Landers. In this sense, the fund is contributed by «rich Landers» and allocated directly to the budgets of «poor Landers» without intervention of the federation. To determine one Lander is contributor to or beneficiary from the fund, the financial strength index (FSI) and the equalization index (IE) will be separately calculated. The fraction of two indexes multiplied to 100 to determine one Lander

is the contributor or beneficiary. The formulas employed to calculate the FSI and EI are presented in the box 3.1.

**Box 3.1 Formulas for calculating the financial strength index (FSI) and equalization index (EI)**

$$FSI_L = R_L + (0.64 \times R_M) \quad (3.1)$$

Where:

$FSI_L$  Financial strength index of the Lander in question;

$R_L$  Revenues of the Lander from: Income tax, corporate tax, lander taxes, VAT tax and royalties;

$R_M$  Revenues of the Municipalities in the Lander in question;

$$EI_L = \left( \frac{R_T \times P_L \times C_{L1}}{WP_{T1}} \right) + \left( 0.64 \times \left( \frac{R_{MT} \times P_L \times C_{L2}}{WP_{T2}} \right) \right) \quad (3.2)$$

Where

$EI_L$  Equalization index of the Lander in question;

$R_T$  Total revenues of the Lander from: Income tax, the corporate tax, the lander taxes, the VAT and royalties;

$P_L$  Population of the Lander in question;

$C_{L1}$  Population coefficient assigned to the Lander in question for the first part of the formula;

$WP_{T1}$  Total German population weighted to reflect the population coefficients assigned to the Lander for the first part of the formula (83.809.801 inhabitants in 2010);

$R_{MT}$  Total Municipalities revenues for all Landers;

$C_{L2}$  Population coefficient assigned to the Lander in question for the second part of the formula;

$WP_{T2}$  Total German population weighted to reflect the population coefficients assigned to the Lander for the second part of the formula (84.014.251 in 2010).

Source: Vandernoot (2014).

The beneficiary Landers are divided into three groups according to the fraction between two indexes. The Lander of each group will be assigned some coefficients to determine the amount that it will receive from the fund. The same process is applied to determine the amount that each contributor Lander will pay to the fund. The table 3.6 shows the classification rules.

**Table 3.6 Classification of Landers according to the fraction between financial strong index and equalization index**

	Beneficiary Landers	Contributor Landers
$\frac{FSI}{EI} \times 100$	< 80	$\geq 100$ but <107
	$\geq 80$ but < 93	$\geq 107$ but < 120
	$\geq 93$ but < 100	$\geq 120$

*Source: Adapted by author from Vandernoot (2014).*

The result of horizontal equalization between German Landers is showed in the table 3.7. The financial strength index is resulted from applying the formula (4.1) while the equalization index is from the formula (4.2). The column (8) shows the fraction between the financial strength index and the equalization index of landers. This index gives a signal to classify Landers into two groups of beneficiaries and contributors. There are twelve Landers which belong the group one and four to the group two. In referring to the formula section, we can determine the amount of receipt or payment for each Lander as figured out in the last column. The result «0» means that the total amount received is equal to the amount paid.

**Table 3.7 Horizontal fiscal equalization**

Land	Financial strength index (FSI) (thousand euro) (municipal indexes are multiplied by 0.64)			Equalization index (EI) (thousand euro) (municipal indexes are multiplied by 0.64)			FSI/EI *100	Land: contributor or beneficiary	Amount Received (+) or (-) (thousand euro)
	Municipal ities	Lander	Total	Municipal ities	Lander	Total			
NW	10'256'897	38'881'529	49'147'426	9'847'576	40'056'639	49'904'215	98.48	beneficiary	354'301
BY	31'993'370	31'993'370	40'449'705	6'906'399	28'092'915	34'999'314	115.57	contributor	-3'511'134
BW	25'722'512	25'722'512	32'904'396	5'930'385	24'122'819	30'053'204	109.49	contributor	-1'708'837
NI	17'601'267	17'601'267	21'641'547	4'375'983	17'800'033	22'176'016	97.59	beneficiary	259'089
HE	15'344'125	15'344'125	19'663'702	3'345'249	13'607'352	16'952'601	115.99	contributor	-1'752'340
SN	8'835'344	8'835'344	10'248'554	2'291'424	9'320'744	11'612'168	88.26	beneficiary	853'882
RP	8'671'563	8'671'563	10'693'685	2'210'529	8'991'693	11'202'222	95.46	beneficiary	266'630
ST	4'991'343	4'991'343	5'789'779	1'319'353	5'261'457	6'580'810	87.98	beneficiary	497'026
SL	6'198'675	6'198'675	7'708'392	1'561'972	6'353'578	7'915'550	97.38	beneficiary	101'218
TH	4'774'149	4'774'149	5'513'776	1'236'374	5'029'154	6'265'528	88.00	beneficiary	472'220
BB	5'366'385	5'366'385	6'388'595	1'424'893	5'627'173	7'052'066	90.59	beneficiary	401'042
MV	3'506'440	3'506'440	4'023'263	953'759	3'694'832	4'648'591	86.55	beneficiary	399'149
SL	2'193'982	2'193'982	2'687'597	562'599	2'288'464	2'851'063	94.27	beneficiary	89'331
BE	7'362'764	7'362'764	8'858'337	2'565'221	10'434'461	12'999'682	68.14	beneficiary	2'899'964
HH	5'200'044	5'200'044	6'854'642	1'325'017	5'389'724	6'714'741	102.08	contributor	-66'307
HB	1'425'619	1'425'619	1'843'656	491'209	1'998'073	2'489'282	74.06	beneficiary	444'764
Total	46'347'942	188'069'111	234'417'053	46'347'942	188'069'111	234'417'053			0

Source: Vandernoot (2014).

#### 3.4.2.3 Federal supplementary Grants (Bundesergänzungszuweisungen)

On the supplementary transfer which are vertically distributed from the Bund the Landers. A total amount of € 12 billion in are allocated through this mechanism in 2010. This fund is divided into two allocation types.

1. *The Federal General Grant (FGG)*: Following the horizontal equalization, if the addition of the financial strength capacity and the amount received from horizontal equalization is lower than 95.5 percent the equalization index. The Lander in question will be compensated for 77.5 percent of the difference.

The table 3.8 shows that there are twelve Landers which were qualified to receive this kind of transfer. The Landers benefit from the transfer is also the beneficiaries

of the horizontal transfer, meanwhile the four Landers which are contributors of horizontal equalization mechanism are non-benefiting Landers of the federal general grant. The allocated amount is around € 2.6 billions in which 35 percent is granted to Berlin which has a lowest index at 90.4 percent.

**Table 3.8 Federal General Grant**

Land	Financial strength capacity + equalization (FSI + E) (thousand euro)	Equalization index (EI) (thousand euro)	(FSI+E)/(E I)*100	Amount received (thousand euro)
NW	49'501'727	49'904'215	99.193	118'549
BY	36'938'571	34'999'314	105.541	0
BW	31'195'559	30'053'204	103.801	0
NI	21'900'636	22'176'016	98.758	127'487
HE	17'911'362	16'952'601	105.656	0
SN	11'102'436	11'612'168	95.610	350'045
RP	10'960'315	11'202'222	97.841	144'069
ST	6'286'805	6'580'810	95.532	202'353
SL	7'809'610	7'915'550	98.662	51'431
TH	5'985'996	6'265'528	95.539	192'358
BB	6'789'637	7'052'066	96.279	176'056
MV	4'422'412	4'648'591	95.134	157'275
SL	2'776'928	2'851'063	97.399	46'407
BE	11'758'301	12'999'682	90.451	911'697
HH	6'788'335	6'714'741	101.096	0
HB	2'288'420	2'489'282	91.931	146'022
Total				2'623'750

Source: Vandernoot (2014).

2. *The Federal Special Grant (FSG)*: This kind of fund is engaged to compensate the special burden of Landers. Except the bailout category which was used to fund some Landers with excessive debt from 1994-2004, the grant is allocated to Landers according the three categories:

- For cost of new Landers: In 2010, five new Landers and the City-state of Berlin shared an amount of € 8.7 billion for the cost of infrastructure and low financial strength of their Municipalities;
- For cost of structural unemployment: € 1 billion is provided to five new Landers to cover the cost due to high level of unemployment and social charges;

- For cost of political leadership: An amount of € 516 million is allocated to ten small Landers in order to support their higher political and administrative cost.

The result is outlined in the table 3.9.

**Table 3.9 Federal Special Grant**

Lander	First grant (thousand euro)	Second grant (thousand euro)	third grant (thousand euro)
NW	0	0	0
BY	0	0	0
BW	0	0	0
NI	0	0	0
HE	0	0	0
SN	2'279'803	319'000	25'565
RP	0	0	46'016
ST	1'375'569	187'000	52'663
SL	0	0	53'174
TH	1'250'910	176'000	55'731
BB	1'252'615	190'000	55'220
MV	921'205	128'000	61'355
SL	0	0	63'400
BE	1'662'989	0	43'460
HH	0	0	0
HB	0	0	60'332
Total	8'743'091	1'000'000	516'916

*Source: Adapted by author from Vandernoot (2014).*

From 2005, the federal supplementary grant is gradually reduced. It was amounted up to € 14 billion in 2008, reduced to € 12 billion in 2010, then € 11 billion in 2012. However, the general supplementary grant rose again to € 2.9 billion in 2012 after being decreased to € 2.6 billion in 2010. For the federal special grant, the first category is considerably reduced from € 10 billion to € 7 billion in 2012. This category is planned to end in 2019. Whereas, the second and the third category remain stable.

### 3.5 Performance of German fiscal equalization



The German fiscal equalization has led to a robust redistributive effect among Landers as being showed in the table 3.10. In the first column, the initiative index varies widely because of the differences of fiscal resource based on the personal income tax, corporate tax, lander taxes and royalties. Before the equalization mechanism taking effect, the lowest index is 48.33 points (Saxony-Anhalt) and the highest is 157.45 point (Hamburg) with a difference of 109.12 points. After the funding, the difference has been reduced to 63.18 with the lowest index is 89.61 (North Rhine-Westphalia) and the highest is 152.79 (Berlin). In term of monetary value, nine Landers have received between € 163 and € 1 938 per inhabitant, other seven Landers have contributed between € 36 and € 987 per inhabitant.

If we consider the gain and loss of revenue index per inhabitant after the funding, three Landers with financially strongest capacity: Hamburg, Bavaria and Hesse have correspondingly lost 40.12, 36.86, 36.29 points of revenue index to the equalization mechanism, meanwhile the three Landers taking gains of the mechanism are: Mecklenburg-Vorpommern gains 78.79, Saxony-Anhalt gains 78.41 and Thuringia gains 76.93 point per inhabitant.

If we rank the financial position of Landers in according to their indexes before and after the funding, five Landers at the lowest positions before the funding have changed considerably: Saxony-Anhalt is up to 4<sup>th</sup> from 16<sup>th</sup>, Thuringia is up to 5<sup>th</sup> from 15<sup>th</sup>, Mecklenburg-Vorpommern is up to 3<sup>th</sup> from 14<sup>th</sup>. Saxony is up to 6<sup>th</sup> from 13<sup>th</sup> and Brandenburg is up to 7<sup>th</sup> from 12<sup>th</sup>. After the finding, Berlin is move to the first place from 9<sup>th</sup> with a gain of 8 places.

Another method to evaluate the performance of German equalization mechanism is to compare the Gini coefficient before and after equalization. The result showed a large effect of equalization where the Gini coefficient of Germany is reduced from 0.06 to 0.02 for 2005 and also in 2012. In addition, the ratio of highest to lowest tax-raising capacity reduced from 1.7 to 1.2 in 2005 and from 1.7 to 1.1 in 2012. (Hansjörg Blöchliger, 2014, p.8).

**Table 3.10 Revenue Indexes after each stage of equalization mechanism**

Lander	Before equalization	After VAT's redistribution	After horizontal equalization	After federal supplementary grants	Solidarity per inhabitant (in euro)
NW	100.5	94.59	95.46	89.61	-268
BY	129.33	110.98	98.8	92.47	-907
BW	117.21	104.09	97.19	90.96	-646
NI	85.65	96.51	97.93	92.31	163
HE	127.4	109.89	97.34	91.11	-893
SN	50.34	92.61	101.54	124.14	1'816
RP	97.43	93.98	96.87	92.6	-119
ST	48.33	92.54	101.75	126.6	1'929
SL	93.39	95.08	96.63	91.94	-36
TH	48.66	92.58	101.73	125.59	1'893
BB	61.84	92.94	99.88	120.62	1'446
MV	49.01	92.58	103.11	127.8	1'938
SL	79.63	93.43	97.23	95.38	388
BE	88.18	93.67	130.24	152.79	1'590
HH	157.45	126.98	125.36	117.33	-987
HB	95.08	93.87	123.15	127.98	809
Total	100	100	100	100	0

*Source: Adapted by author from Vandernoot (2014).*

### 3.6 Conclusion

Under constitutional mandate known as «equality of living condition» which characterizes the actual fiscal equalization at a high degree both on the vertical and horizontal mechanism. However, the financially weak Landers have not reduced their expenditures when their budgets are in deficit. It is argued that the supplementary transfer meet political bargains rather than a pure distributive plan.

In principle, this transfer can be turned into VAT sharing at the pre-equalization stage (Selmer, 1994). In addition, because the discretionary nature of these new vertical grants that has reduced the transparency of German fiscal equalization (Guihéry, 2001).

Constitutional structure provides a good deal on fixing of tax shares in the Basic Law. However, little revenue autonomy and generous equalization system deliver less incentive to make prudent budgetary constraints as some Landers have been aligned for bailout from the federal government under the decision of the Federal Court. Moreover, most of decision concerning the fiscal equalization is the result of unanimous voting at the federal parliament and voters cannot check the power over fiscal decisions because of lacking information.

With a high level of fiscal centralization, Landers are strongly dependent on equalization resource. Because there is no constraint on spending and borrowings, , certain Landers have miscondacted their fiscal policies. Lacking of such mechanism, financially strong Landers are becoming source of frustration, they begin to undermine the solidarity, challenging the fiscal equalization at the Federal Court.

Under political process, the Bund is forced to bailout the Lander Saarland and Brennen. Constitutional Court has transformed the equivalence of living condition to guarantee the profligate Landers. The Landers indiscipline on borrowing and spending place Germany in a situation of violating the public finance criteria indicated in the Maastricht Treaty. On discussion of the reform, more decentralization by a process of function assignment to Landers and shift to strict horizontal equalization go give more fiscal autonomy. Fiscal constraint should be applied at all three level of government (Rodden, 2005, p. 27).

There are certain Landers with an extreme small in comparison to other on basic of population size, tax capacities and geographic area. A higher level of fiscal decentralization and political decentralization would encourage more voluntary

association of subnational governments. This would improve the fiscal performance, increase the well-being of citizen, more transparency and strengthen the flexibility of Lander and local public finance policy.

# Chapter 4 Fiscal equalization in Switzerland

## 4.1 Institutional arrangement of the Swiss Confederation

### 4.1.1 Federal structure and institution

The Swiss Confederation is a small country with a quite heterogeneous population. There are four official languages, a large diversity of culture and three levels of government: Confederation, 26 Cantons and about 2 760 Municipalities. The Constitution assigned certain areas such as foreign policy, monetary policy, and national defense to the Confederation, while the Cantons have a large power on nearly most of other fields. The federal executive branch consist of 7 members which are not elected directly by the voters but by the federal parliament for mandate of 4 years, presidential position is elected by the federal parliament for one year and has no exclusive power.

The federal legislative known as federal assembly consists of two chambers: The National Council with 200 members elected by proportional principle to population, and the Council of States with 46 members represent the Cantons. When the National Council is elected by federal rules, the Council of States is elected by Cantons with different rule of each one.

Except for the Canton Jura which was detached from Bern in 1978, other Swiss Cantons accepted to join the Confederation in 1848 next to the Constitution to which they ceded a part of sovereignty to the Confederation. Each Canton has its own constitutions, parliament, government and court. The size of government varies from 58-200 seats and cantonal governments has 5, 7 or 9 members.

There were about 3 211 Municipalities in 1860. Over a century, the number of Municipalities was slightly reduced to 3 095 in 1960, 3 001 in 1994 and 2 940 in 1996. Recently, with the acceleration of fusion, the number of Municipalities was

about 2 636 in 2009. The decline is due to amalgamation, especially in the Canton Tessin and Fribourg.

About one-fifth of communes has their own parliaments, four-fifth of municipal decisions are made by a process of direct democracy in local assembly. Citizens are invited to participate to local assembly (at least two annual sessions) where they can ask question, make proposal and vote on various subjects. Along with tasks which are entrusted by the Cantons and Confederation such as population register and civil protection, Municipalities also have their own competencies in various areas such as basic education, social affairs, energy supply, road building, local planning, and taxation. These powers are self-regulated or determined by the Canton, so they varies considerably from one Canton to another.

#### 4.1.2 Role of direct democracy

The 1848 Constitution allowed the Swiss citizens launch initiatives and referendums as given in the *Article 139-141*, Chap 2 of the Constitution. This arrangement is also included in the cantonal constitutions of 26 Cantons. In fact, the direct democracy is executed at three levels of government, so that any change in public policy could be vetoed by such a system of democracy. The equalization system is also decided though a referendum which can be valid in according the principle of double majority: More than one half of voters and more than one half of Cantons.

## 4.2 Assignment of public functions in Switzerland

### 4.2.1 Assignment of competences

The sovereign of Swiss Cantons is well defined at the *Article 3* of the 1999 Federal Constitution «The Cantons are sovereign except to the extent that their sovereignty is limited by the Federal Constitution. They exercise all rights that are not vested in the Confederation». This constitutional arrangement is an important highlight of the

principle of subsidiarity in assigning responsibilities between the Confederation and the Cantons. It expresses that the public goods and services must be provided by the jurisdictions which are closest to their citizens.

Under the provision of the federal Constitution, the Confederation has competences on: Foreign affairs, national security, customs duties, currency, civil law and criminal law. The *Article 42* of the 1999 Federal Constitution defines the strict assignment of function to the Confederation «The Confederation shall fulfil the duties that are assigned to it by the Federal Constitution».

In the case of Switzerland, Cantons can pass complementary legislation to accomplish federal laws on the field preserved constitutionally to the Confederation. The *Article 43* of the 1999 Federal Constitution provides that «The Cantons decide on the duties that they must fulfil within the scope of their powers». Moreover, Cantons frequently carry out the tasks on behalf of the Confederation if these tasks have not been exercised by the Confederation. There are various fields which are identified as joint tasks for both levels of governments such as education, hospitals and prisons. Put differently, Cantons exercise as agencies of the Confederation in these fields.

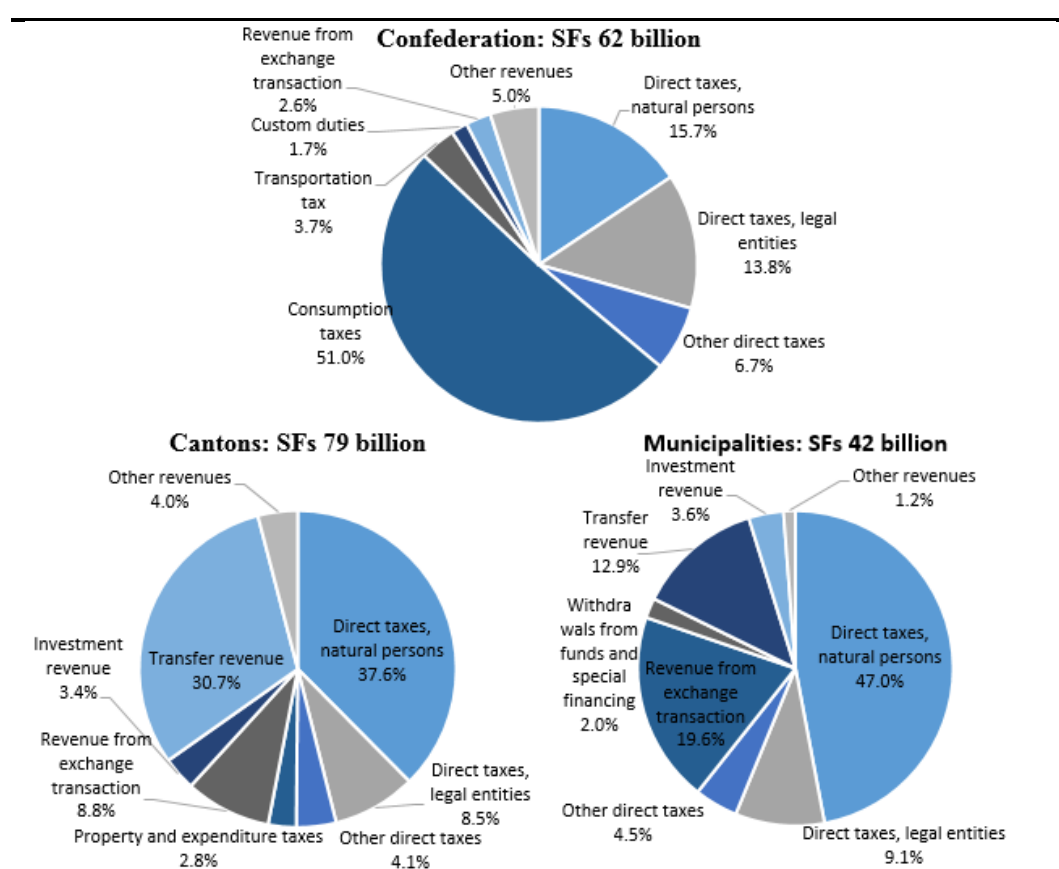
Cantons have full authority over their Municipalities within their territory and they decide also their autonomies. However, the level of autonomy varies considerably from one Canton to another. The responsibilities of Municipalities are also defined by the Cantons with various fields such as social services, energy supply, local road and infrastructures, basic educations.

#### 4.2.2 Taxing power

Under the constitutional arrangement, there are certain taxes which are exclusively levied by the Confederation such as consumption taxes (including VAT), custom duties and other duties. Nevertheless, the Constitution also stipulates a maximum tax rate that the Confederation can apply to VAT and other consumption taxes,

direct taxes on natural persons, investment return tax and capital tax. Cantons are not allowed to collect tax on commodities which are exempted by the Confederation. Other main taxes are shared between Cantons and the Confederation such as personal income tax and corporate taxes. The graphic 4.1 shows the total tax revenue of the Confederation in which the consumption taxes make up 51 percent, while the direct taxes on natural persons and on legal entities amount respectively to 15.7 and 13.8 percent of the total tax revenue.

**Graphic 4.1 Taxing power of the Confederation and Cantons**



Source: Calculated by author from Federal Department of Finances (2014).

Swiss Cantons enjoy a considerable fiscal autonomy over their tax categories, their two most important resources are direct taxes on natural persons and transfer revenue which account respectively for 30.7 and 30 percent of their total revenue. The revenue from exchange transaction (user charges and fees) accounts for 8.6 percent and direct taxes on legal entities for 8.5 percent of the total revenue of



Cantons. Under to the Federal Tax Harmonization *Law* (1990) that reinforce the cooperation between Cantons and the Confederation on the fiscal issue, there are some important taxes whose formulas of calculation are redefined. Particularly, the definition of tax base is now assimilated in all Cantons, however the tax rate can vary considerably from one Canton to another. After all, the intention of the Federal Tax Harmonization Law is to release partially the tax competition between Cantons, establish a yardstick tax competition and encourage the inter-cantonal cooperation with regard to the fiscal policy.

Municipalities also have a significant competence on taxation field, especially the property tax, user charges and fees which they may define both the tax base and rate according to their proper choice and cantonal fiscal arrangement. The Municipalities main revenue resources are from direct taxes on persons (47 percent), revenue from exchange transaction (19.6 percent) which is collected by applying the principle of causality and transfer revenue from the Confederation and Cantons (12.9 percent).

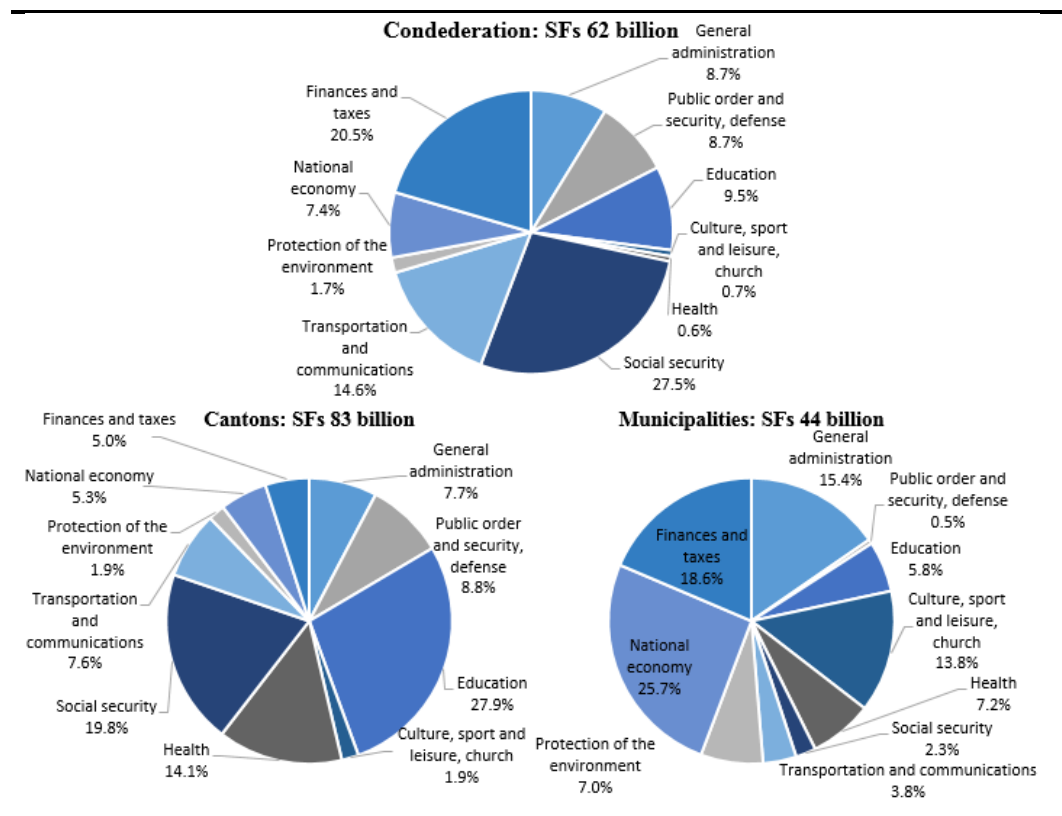
#### 4.2.3 Spending power

The Confederation has a power on its spending decision, however, when the federal spending relating to the joint task competence, the Confederation has to take into consideration the preference of Cantons by a consulting process. Certain spending categories may be challenged by a referendum. Consequently, Swiss Cantons has an effective influence on the exercise of federal spending.

The graphic 4.2 shows that the Confederation expenditure makes up 32.8 percent of the total general government budget across three levels of government. The Confederation allocates the largest amount to social security up to 27.5 percent of its expenditure budget. Around 20.5 percent is devoted to finances and taxes and 14.6 percent to transportation and communications from the Confederation budget.

The Cantons expenditures account for 43.9 percent of total public expenditure and the Municipalities for 23.3 percent. Three categories of expenditure which absorb 61.8 percent of cantonal budgets are education (27.9 percent), social security (19.8 percent) and healthcare (14.7 percent). For the Municipalities expenditure, 59.7 percent of their budget is allocated to national economy, social security and general administration. Relating to domain of education, Municipalities are responsible for the spending for kindergartens and obligatory schools, while the Cantons are in charge of spending on professional schools and universities. As a result, the distribution of spending on education is 18.7 percent for the Confederation, 73.3 percent for Cantons and 8 percent for Municipalities.

**Graphic 4.2 Spending power of the Confederation and Cantons**



*Source: Calculated by author from Federal Department of Finances (2014).*

After the healthcare reform in 1994, the financing of healthcare are largely passed to the private sector in order to discharge the burden of public sector. The Confederation seems to be absent of direct financing the healthcare, however it is

responsible for establish a law framework for the Cantons and Municipalities which are charged with implementing policies.

### 4.3 Former fiscal equalization in Switzerland

In 1938, the first equalization program was implemented in Switzerland, then some conditional grant were allocated to Cantons in according to their tax capacities. In 1958, a particular article providing competence to the Confederation to form an official equalization mechanism, was introduced into the Constitution. Swiss Economist Christopher Hengan-Braun is considered the founding father of the equalization for the reason that he outlined the guidance for the designing of equalization programs which were implemented to reduce the fiscal disparities between Cantons. *The Article 42* of the 1958 Constitution provides that:

«The Confederation encourages financial equalization among the Cantons, in particular when federal subvention are granted, the financial capacity of the Cantons and situation of mountainous regions must be considered in an appropriate fashion»

*Article 42 of the 1958 Constitution.*

Next to the constitutional modification, a law on fiscal equalization was adopted on June 19, 1959. The law indicates that the main objective of such a program is to provide the Cantons with sufficient fund which allow them to produce certain public goods and service at a minimum acceptable level without increasing much on their tax burdens. The message of the law arms to correct fiscal imbalance which is a result of the difference between the tax raising capacity of the Cantons and the relative cost of providing public goods and services.

To reduce the fiscal disparities between Cantons, the former fiscal equalization mechanism consisted of three financial transfer programs among which the two programs flow fiscal resources from the Confederation to the Cantons are federal grants and revenue sharing. The third program flowed in reserved direction from

the Cantons to the Confederation under form of contribution to social security. However, all three programs use the cantonal financial capacity as the only indicator to determine the volume of transfers.

The latest version of the former formula for computing the financial capacity index dated in 1986 and had four components<sup>6</sup>. The process of calculation was extreme complex as well as there was no separation between the resource equalization and the expenditure (cost) equalization. In addition, the system neither resulted in a reduction of fiscal disparity between Cantons nor reinforced the fiscal autonomy if not make the beneficiary Cantons more dependence on the transfer from the Confederation.

In 2001, the calculation resulted that Canton Zoug had a highest total index of financial capacity at 218 point which is 7.3 times higher than the Canton Valais with the lowest index at 30 points. This index was also used to integrate into other formulas determine federal transfers to Cantons: Conditional federal grant-in-aid, revenue sharing, withholding tax sharing.

#### 4.4 The present system of fiscal equalization in Switzerland

A project of reform of the equalization was initiated by the federal department of finances in 1994. The conferences of cantonal directors of finances settled the principal objective is «The financial relations between the Confederation and Cantons must inspire the principle of subsidiarity as much as possible» (The Federal Council, 1994, cited in Eric Mottu, 1997). Years later, the issue was largely debated in the parliament, at the negotiation between Cantons and the Confederation. Meanwhile, a group of expert was in charge to examine the actual equalization system and provide technical consultations for the new scheme of fiscal equalization. Consequently, the group of experts concluded that the old system needed a profound reform because of these main reasons.

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<sup>6</sup> Consult the paper of Dafflon (2004) for more detail on the former formula.

- The actual system of equalization has not succeeded in reducing cantonal disparities;
- Over the years, the system has become more and more entangled, blurring the actual responsibilities of the two layers, with too much centralization;
- Part of the revenue equalization policy, especially the Cantons' contributions to social security expenditures, is inefficient;
- The conditional grant system advantages the rich Cantons rather than the poor ones. Although the rates of matching grants are the higher the poorer the Canton, Cantons with low financial capacity have not been able to take advantage of this grant system because of their difficulty to fund their own part of the expenditure. Clearly stated, it does not make sense giving a 60 per cent grant to a «low capacity» Canton for a specified function if it cannot find money for the remaining 40 per cent. In this case, straightforward revenue equalization without condition is obviously a better alternative;
- There is a general confusion in the present system between incentive, efficiency and equalization.

*Source: Dafflon (2004).*

After some modifications, the project was adopted by the federal parliament in October 2003 and accepted by 65 percent of Swiss voters and by 22/26 Cantons in the popular referendum of November 2004. From January 2008, the new financial equalization was implemented.

#### 4.4.1 Elements of new equalization systems: Reassignment of functions

The new equalization is precisely described in the 2001 Federal Message. At the beginning, the reform is based on two issues: Reform of fiscal equalization and reform of assignments of public functions. Put differently, the reform aimed at a

process of shifting the present fiscal equalization to a new one coupled with a reassignment of responsibilities between the Confederation and the Cantons.

The reassignment of responsibilities is divided into three schemes:

- A clear reassignment of tasks and financing between the Confederation and Cantons where: 7 exclusive function are assigned to the Confederation, 12 joint-tasks are under responsibility of both the Confederation and the Cantons and 13 exclusive tasks belong to the Cantons;
- For joint-task, a new form of collaboration between two layers of government in which the Confederation is responsible for outlining the laws while the Cantons take over the operation management and implement of policy. In this case, Cantons' activities are characterized as agencies of the Confederation.
- Cantons are obligated to collaborate through inter-cantonal agreement referred to 9 functions which are included in the *Article 42* of the Constitution. The horizontal compensation of charge and cost for certain public services which benefit several Cantons. A more detail on new reassignment of function is showed in table 4.1.

**Table 4.1 Reassignment of public functions between the Confederation and Cantons**

Functional classification of public expenditure in the harmonized public accounting system	Exclusive federal 7 function (CF, 2001a: 45)	Exclusive cantonal 13 functions (CF, 2001a: 45-46)	Joint federal-cantonal 12 functions (CF, 2001a: 47)	Inter-cantonal 9 functions (CF, 2001a: 48)
1. Law and public order	(1) Organization and equipment army;		(1) Cadastral measurement;	(1) Penitentiaries;
2. Education		(1) Scholarship and financial aid at the second level education; (2) Sport activities at school; (3) Sport educational teaching schools and teaching material; (4) Education in specialized school for handicapped and disabled people;	(2) Education grants in the service sector (partial);	(2) Institutions for disabled;  (3) Universities; (4) Professional high school;
3. Culture and sport	(2) Protection and conversation of historical buildings and sites of national importance;	(5) Protection and conservation of historical buildings and sites of regional and local importance;		(5) Cultural institutions of inter-Cantonal importance;

<i>(Continued)</i>				
4. Health		(6) Individual welfare and for elderly people living in specialized or medical home;	(3) Help to reduce illness insurance premium;	(6) Specific medical care and specialized hospitals;
5. Social aid	(4) Old age pension; (5) Insurance for disabled people; (6) National institutions of care and help for old and disabled;	(7) Housing in mountainous regions; (8) Medical and family help at domicile; (9) Grant –in-aid for the buildings and running costs of home and professional for disable people;	(4) Complementary social aid for minimum living condition (partial);	
6. Transportation and communications	(3) National roads and motorways;	(10) «Normal» roads; (11) Technical improvement of regional and local traffic	(5) Main roads, great projects; (6) Regional public transportation; (7) Airport;	(7) Urban public transportation;
7. Environment		(12) Protection against noise and air pollution; (13) Land zoning;	(8) Flood protection; (9) Nature and landscape protection;	(8) Sewage purification plants; (9) Waste disposal plants;
8. Agricultural, forestry, industry, tourism and services	(7) Cattle and breeding;		(10) Hunting and fishing; (11) Forestry; (12) Agricultural structural improvement;	

*Source: Dafflon (2004).*

#### 4.4.2 Formulas of fiscal equalization

Following to the reassignment of public function between the Confederation and Canton, a new scheme of fiscal equalization is conjointly designed and replaced the former one. This section is therefore devoted to examine the system of fiscal equalization which consists of three programs: Resource equalization, needs (cost) equalization and cohesion funds.

##### 4.4.2.1 *Formulas of new equalization scheme*

A new formula is developed to calculate the financial capacity of each Canton. The objective aims at ensuring sufficient resource to Cantons so that they can fulfil the tasks that have been entrusted to them and reducing the financial disparities between Cantons. The formula is exclusively based on revenue resource on which the cantonal fiscal capacity is ranked on.

To establish a ranking of cantonal financial capacities, it requires a financial resource indicator to replace the old one which were actually evaluated as

inadequate by both layers of governments and the group of experts. After certain technical corrections, the agreed formulas is outlined as being presented in the box 4.1. The resource equalization between Cantons is therefore carried out in three following steps:

- First, the «Aggregate Tax Base» is calculated by adding three components of federal direct taxes: The total taxable income of individual, wealth of individual and the taxable benefit of legal entities in the Canton in question respecting to the rules for taxes assessment of federal direct tax and not of cantonal rules. The revenue potential is the average of aggregation of three consecutive years.
- Second, revenue potential indicator is fixed at 100 points for the national average. The Cantons revenue potential indicators of are the results of multiplying their revenue potential per capital to 100, then dividing to the national resource potential per capita.
- Finally, the Cantons are classified in two groups according to whether their indicators are higher than the national average of 100 points or not. Consequently, the 26 Cantons are ranked from one to another into two categories. The Cantons with indicators >100 points are qualified as the Cantons with strong resource potential. These Cantons (Cantons «payers») make monetary payments to the fund, whereas the Cantons with indicator <100 points are qualified as the Cantons with weak resource potential. These Cantons (Cantons «beneficiaries») receive payments from the fund. The formula (4.2) and (4.3) are used to calculate the amount that one Canton pays to or receive from the fund.



#### Box 4.1 Formulas for resource equalization

The Aggregate Tax Base is determined by the formula:

$$ATB_i = \frac{R_i^{PhP} + \alpha W_i^{PhP} + B_i^{Cor} - HOL1_i + \beta HOL2_i}{POP_i} \quad (4.1)$$

Where:

- ATB* Aggregate Tax Base;
- i* Canton  $i = 1, 2 \dots 26$ ;
- R* Total taxable income from physical taxpayers, after deduction of SFs 23.300, without inter-cantonal repartition of the tax base if the taxpayer is active in several Cantons; + taxable income at source (cantonal tax bases for the federal direct tax FDT);
- PhP* Physical person or individual;
- $\alpha$  Rate of return for *W*, without interest payment and dividend,  $\alpha = 0.016$  which mean that 100 SFr is equal to 1.60 SFr of taxable income;
- W* Wealth of physical person;
- B* Total taxable benefit of corporate business entities with no tax advantages;
- Cor* Corporate business entities;
- HOL1* Total taxable benefit of business entities with participation.
- $\beta$  Factor of the correction which allows to calculate the taxable benefit for holding companies and financial companies;
- HOL2* Total benefit of holding companies and financial fund companies;
- POP* Residential population.

- Contribution of Cantons with financially strong resource potential is determined by the formula:

$$A_q = \frac{A}{\sum_{q=1}^n [(RI_q - 100) \cdot e_q]} \cdot (RI_q - 100) \cdot e_q \quad (4.2)$$

Where:

- A* Total contribution of Cantons with strong resource potential;

(Continued)

- $A_q$  Contribution of  $q$ , the Canton with strong resource potential;
- $E_q$  Average, for years taken into calculation, of the residential population of the Canton with strong resource potential;
- $RI_q$  Index of resources  $q$ , the Canton with strong resource potential;
- $N$  Number of Cantons with strong resource potential.

Source: Dafflon (2004).

- Contributions paid to the Cantons with weak resource potential is determined by the formula:

$$B_r = \frac{B}{\sum_{r=1}^m [(100 - RI_r)^{1+p} \cdot e_r]} \cdot (100 - RI_r)^{1+p} \cdot e_r \quad (4.3)$$

with the value of parameter  $q$  is fixed in according to the following equation:

$$\left\{ \frac{SSE_{CH}}{e_{CH}} \cdot \frac{\sum_{r=1}^m [(100 - RI_r)^{1+p} \cdot e_r]^{\frac{1}{p}}}{(1+p) \cdot B \cdot 100} \right\} = 100 - RI_{\min} \quad (4.4)$$

Where:

- $B$  Total contribution paid to the Canton with weak resource potential;
- $B_r$  Contribution paid to  $r$ , the Canton with weak resource potential;
- $E_r$  Average, for years taken into calculation, of the residential population of the Canton with weak resource potential;
- $RI_r$  Index of resources  $q$ , the Canton with weak resource potential;
- $m$  Number of Canton with weak resource potential;
- $p$  Parameter ( $>0$ ) indicate the strength of the progression;
- $RI_{\min}$  Index of resource presenting the weakest resource potential;
- $SSE_{CH}$  Standardized fiscal revenues of Switzerland;
- $E_{CH}$  Average, for years taken into calculation, of the residential population of Switzerland;

Source: Confederation Suisse (2007), translation.

The table 4.2 regroups the result of all three equalization programs of Switzerland in 2015. Result of resource equalization is showed in the column (3) in which the resource equalization includes of two types of transfers according to their direction: The horizontal and vertical transfers. The horizontal transfer indicates the flow of resource from the Cantons with strong resource potential to the Cantons with weak resource potential with respect to their resource indexes, while the vertical transfer flows from the Confederation to the Cantons with weak resource potential

**Table 4.2 Net compensation payments in 2015**

Canton	Resource index 2015	Resource equalization 2015				Compensation for charges 2015				Total of equalization instrument	Net compensation of cohesion fund	Total of net payment 2015	
		Horizontal				CCG	CCS		Total			Total	SFs/inhabitant
		Charge	Relief	Vertical	Total		A-C	F					
ZH	119.5	465'182	0	0	465'182	0	-2'711	-65'694	-68'405	396'777	20'251	417'028	302
BE	74.3	0	-464'759	680'550	-114'309	-28'112	-23'541	-120	-51'774	-1197'082	-36'334	-1233'416	-1'253
LU	79.6	0	-124'824	-182'781	-307'605	-6'589	0	0	-6'589	-314'194	-17'963	-332'157	-883
UR	61.6	0	-30'565	-44'757	-75'323	-11'690	0	0	-11'690	-87'013	574	-86'438	-2'463
SZ	165.9	166'246	0	0	166'264	-6'825	0	0	-6'825	159'439	2'120	161'559	1'108
OW	86.9	0	6'017	-8'810	-14'827	-6'279	0	0	-6'279	-21'106	-8'908	-30'014	-849
NW	130.5	21'413	0	0	21'413	-1'270	0	0	-1'270	20'143	621	20'755	511
GL	68.9	0	24'492	-35'864	-60'357	-5'406	0	0	-5'406	-65'763	-7'533	-73'296	-1'892
ZG	261.4	314'985	0	0	314'985	0	0	0	0	314'985	1'628	316'613	2'806
FR	77.0	0	-111'393	-163'113	-274'506	-9'259	0	0	-9'259	-283'765	-133'346	-417'111	-1'496
SO	78.3	0	-93'131	-136'372	-229'503	0	-1'854	0	-1'854	-231'357	4'024	-227'333	-894
BS	143.6	144'200	0	0	144'200	0	-36'295	-19'016	-55'310	88'889	3'192	92'082	481
BL	100.1	684	0	0	684	0	0	0	0	684	4'264	4'948	18
SH	101.9	2'467	0	0	2'467	0	-1'533	0	-1'533	934	1'216	2'150	28
AR	84.4	0	-11'766	-17'229	-28'995	-19'086	0	0	-19'086	-48'080	886	-47'195	-892
AI	82.8	0	-4'021	-5'888	-9'909	-8'436	0	0	-8'436	-18'345	243	-18'103	-1'153
SG	79.0	0	-166'821	-244'278	-411'099	-1'812	0	0	-1'812	412'912	7'438	-405'474	-847
GR	81.4	0	-57'068	-83'565	-140'633	-138'182	0	0	-138'182	-278'815	3'128	-275'687	-1'398
AG	89.2	0	-76'828	-112'499	-189'327	0	0	0	0	-189'327	8'967	-180'360	-297
TG	77.4	0	-96'496	-141'301	-237'797	-3'737	0	0	-3'737	-241'534	3'773	-237'761	-960
TI	98.5	0	-2'115	-3'097	-5'212	-14'403	-20'386	0	-34'789	-40'001	5'092	-34'909	-104
VD	106.5	80'619	0	0	80'619	0	-64'718	-3'745	-68'463	12'156	10'420	22'576	32
VS	68.8	0	-198'829	-291'147	-489'975	-74'245	0	0	-74'245	-564'220	4'529	-559'691	-1'792
NE	88.1	0	-25'358	-37'132	-62'490	-23'147	-15'575	0	-38'722	-101'212	-106'069	-207'280	-1'200
GE	144.9	356'417	0	0	356'471	0	-74'812	-32'402	-107'214	249'257	6'772	256'029	558
JU	62.7		-57'803	-84'641	-142'443	-4'455	-532	0	-4'986	-1'47'430	-18'268	-165'698	-2'388
CH	100.0	1'552'285	-1'552'285	-2'273'025	-2'273'025	-362'933	-241'955	-120'978	-725'866	-2'998'891	-239'292	-3'238'182	-410

*Source: Administration des Finances (2015), translation.*

The column (2) presents the resource indexes which is used to calculate the amount of resource equalization to each Canton. The Cantons with resource indexes above 100 points will finance those with resource indexes below 100 points. The transfer will be executed horizontally between Cantons. In the next stage, the Confederation will make the transfer vertically in such a way that allow the Cantons with weak resource potential to attain the predetermined objective of 85 percent of the national average.

In 2015, the total amount of resource equalization is up to SFs 3 835 million. Ten Cantons with strong resource potential contribute SFs 1 552 million plus the Confederation with SFs 2 273 million to finance sixteen Cantons with weak resource index. Three Cantons contribute most to horizontal payment are Zurich, Geneva and Zoug, while the Canton Jura, Bern and Valais receive the highest amounts. Bern, Valais and Saint-Gall receive largest financial allocations from the Confederation for resource equalization.

#### *4.4.2.2 Formula and results of compensation of excessive charges*

The question is how to design a system of compensation for the additional cost due to natural factors such as: Altitude, ground declivity, low population density, mountainous regions or distance to service delivery which lead to raise the unit cost of public service production. This operation is completely different from the resource equalization, the cost equalization have two components:

- i. Compensation for additional costs due to geographical and topographical factors (CCG)*

The additional cost generalized from the production of cantonal public service for geographical and topographical reasons. The cost of production is usually higher in the Cantons with more mountainous area, higher cost for service delivery to population living on mountainous area and cost due to the structure of population.

Three categories are selected with four respective components are weighted differently as being presented in the table 4.3.

**Table 4.3 Determination of criteria and weighting for CCG**

Category	Criteria	Weighting
Surface area	Altitude (without unproductive surfaces) > 1'080m	33 percent
Population	Living on altitude > 800m	33 percent
Structure of	Localities less than 200 inhabitants	16.7 percent
Population	Low demographic density	16.7 percent

*Source: Adapted by author from Conseil Fédéral (2001), translation.*

The national average for each series is given at 100 points. After the calculation, if the index of charges of one Canton is higher than 100 points of national average, it would receive compensation taking the form of conditional block grants as compensation for the excessive charge dues to CCG. Beneficiary Cantons are free to decide to which of three functions it would allocate the total amount of compensation. The statistic of surface area, population and households are used as base for the calculation of index of charge.

The table 4.4 shows the amount of CCG according to the weighting of four disability criteria. In 2015, there are seventeen Cantons qualified to receive the payment from CCG. Three Cantons: Grisons, Valais and Bern receive largest amounts from this compensation (see table 4.2, column (4)).

**Table 4.4 Distribution of CCG according to criteria – 2015**

Compensation for additional costs due to geographical and topographical factors (CCG)			
Surface area	Population	Structure of population	
Surface area situate above the altitude of 1'080m (without unproductive surfaces)	Population live above the altitude of 800m	Localities of less than 200 inhabitants	Low demographic Density
Weighting 33.3% SFs 120.9 million	Weighting 33.3% SFs 120.9 million	Weighting 16.7% SFs 60.4 million	Weighting 16.7% SFs 60.4 million

*Source: Adapted by author from Département Fédéral des Finances (2015), translation.*

*ii. Compensation for additional charges due to socio-demographical factors (CCS)*

The second part of cost equalization is implemented by the Confederation aiming at compensate additional charges for the central cities which support generally a higher charges due to socio-demographic factors of population structure. According to the common sense, the urban cities have a higher proportion of aged persons, the poor, nonparent family, dependent persons, students, unemployment, and foreigners. These groups would cause to a higher charge because they pay little of taxes and require more of public services. The CCS consists of two formulas respectively to two types of compensation.

*CCS for Structure of the population (domain A to C):* The calculation of «determinant excessive charges» due to the structure of the based on three partial indicators: «Poverty», «structure of age» and «integration of foreigners». The population and social aid statistics are employed to the calculation. On the contrary to the CCG, indicators are aggregated with an analysis of some principal components to establish a global index of charges. Canton with positive index of charge in comparison to the national average will receive proportionally the amount of transfer for excessive charges of CCS. The determinant excessive charges are result of multiplying the index of charge by determinant population. Only Cantons with positive index of charge present the determinant excessive charges. The payments are proportional to determinant excessive charges. The weighting for domain A-C is at 66.6 percent of the total payment.

*CCS for City Center (domain F):* First, the «determinant excessive charges» are calculated on the statistic base of Municipalities due to three partial indicators: «population of municipality», «density of population» and the «employment rate» which are weighted by an analysis of principal components. Second, the standardized indicators of Municipalities are aggregated at the cantonal level and put in relation with the permanent resident population of the Canton in question in

order to form a global index of charges. The coefficient of charges is the difference between the index of charges of Canton and the lowest index of charges of all Cantons. The payments are proportional to the determinant excessive charges. The weighting for this domain F accounts for 33.3 percent of the total payment.

The result of CCS is presented in the of the table 4.2 column (4) where another SFs 363 million is engaged to finance CCS. Two-thirds of the compensation fund is allocated to the CCG for the domains A to E with as amount of SFs 241.9 million, the remaining one-third is allocated the CCS for the domains F with an amount of SFs 120.9 million. In 2015, ten Cantons are qualified to receive the compensation from CCS (Domain A-C) in which the Canton Geneva, Vaud and Basel receive the highest transfers, while four Cantons receive payments from CCS (Domain F) are the Zurich, Geneva, Bale-Ville and Tessin.

Regarding to the total amount of compensation, there are three Cantons receiving most of transfer are Grisons, Geneva and Valais in which Grisons and Valais receive only from CCG while Geneva receive transfer from CCS for both domain A-C and F. Three Cantons do not receive any transfer from compensation of excessive charge are: Zoug, Bale-Campagne and Argovie.

#### *4.4.2.3 Cohesion funds*

The change from old system of equalization to the new one has a disadvantaged effect on several Cantons, especially on the financial flux between the Confederation and the Cantons, between the Cantons themselves. This kind of compensation aimed at facilitating the shifting to the news system so the Confederation and Cantons have concluded the necessity for such compensation to the Cantons with weak resource potential. Because a shifting to the new system creates certain circumstances where they benefit less of financial means in comparison to the old system.

An amount of SFs 359 million were used to fund the cohesion fund which are contributed by the Confederation for two-third (SFs 239 million) and by the

Cantons with strong resource potentials for one-third (SFs 120 million). The financing of fund will be outdated after 24 years and reconsidered each four years. Once a beneficiary Canton is above the national average of 100 points, it would not no longer receive the payment. In 2015, there are seven Cantons which are eligible for the payment from the fund. The table 4.2 column (6) gives net compensation of cohesion fund.

#### 4.5 Performance of Swiss fiscal equalization

The predetermined objective is to allow the Cantons with financially weak capacity to raise the resource revenue until 85 percent of the national average after resource equalization. The payments is under form of block grant and not earn-marked. As the table 4.5 shows that the resource potential index has been increased considerably after resource equalization taking effect. The Canton Uri with the lowest index at 61.6 points has been raised to 86.8 points, an increase of 25.2 points, while the strongest Canton Zoug with the highest index is reduced from 261.4 point to 228.6 points (a fall of 32.8 points). In term of monetary value, three Cantons with weakest index Uri, Jura and Valais receive correspondingly SFs 2 146, SFs 2 053 and SFs 1 569 per habitant while the three strongest Cantons: Zoug, Schwytz and Geneva contribute SFs 2 792, SFs 1 140 and SFs 777 respectively to the resource equalization funds. Horizontal transfer has considerably reduced the fiscal disparity between Cantons since the introduction of new mechanism in 2008. There were two years where the objective was not reached after effective equalization for example: The Canton Jura 84.7 (2010) and 83.5 (2011), Canton Uri with index of 84.4 (2010) and 83.3 (2011). From 2012 until this present, observation shows a convergence of cantonal resource indexes and even the objective is passed until 86.8 points in the Canton with lowest index.



**Table 4.5 Resource index before and after equalization***(+) charge for the Canton, (-) Relief for the Canton*

	Resource equalization 2015					
	Horizontal			Vertical		Index SFR after fiscal equalization
	Resource index 2015	Amounts paid	Amounts received	Amounts received	Total	
	Points	In SFs 1 000	In SFs 1 000	In SFs 1 000	In SFs 1 000	Points
ZH	119.5	465'182	0	0	465'182	115.5
BE	74.3	0	-464'759	680'550	-1 145'309	88.0
LU	79.6	0	-124'824	-182'781	-307'605	89.3
UR	61.6	0	-30'565	-44'757	-75'323	86.8
SZ	165.9	166'246	0	0	166'264	152.5
OW	86.9	0	6'017	-8'810	-14'827	91.8
NW	30.5	21'413	0	0	21'413	124.3
GL	68.9	0	24'492	-35'864	-60'357	87.2
ZG	261.4	314'985	0	0	314'985	228.6
FR	77.0	0	-111'393	-163'113	-274'506	88.6
SO	78.3	0	-93'131	-136'372	-229'503	88.9
BS	143.6	144'200	0	0	144'200	134.7
BL	100.1	684	0	0	684	100.1
SH	101.9	2'467	0	0	2'467	101.5
AR	84.4	0	-11'766	-17'229	-28'995	90.8
AI	82.8	0	-4'021	-5'888	-9'909	90.2
SG	79.0	0	-166'821	-244'278	-411'099	89.1
GR	81.4	0	-57'068	-83'565	-140'633	89.8
AG	89.2	0	-76'828	-112'499	-189'327	92.9
TG	77.4	0	-96'496	-141'301	-237'797	88.7
TI	98.5	0	-2'115	-3'097	-5'212	98.7
VD	106.5	80'619	0	0	80'619	105.2
VS	68.8	0	-198'829	-291'147	-489'975	87.2
NE	88.1	0	-25'358	-37'132	-62'490	92.3
GE	144.9	356'417	0	0	356'471	135.8
JU	62.7		-57'803	-84'641	-142'443	86.9
CH	100.0	1'552'285	-1'552'285	-2'273'025	-2'273'025	86.9

*SFR= Standardized fiscal revenue**Source: Federal Department of Finance (2015).*

As for the compensation of excessive charge: Contrary to the resource equalization in which the objective is well defined. Therefore, it is possible to compare the situation of each Canton before and after equalization in referring to the predetermined objective. There are two reasons which explain why the evaluation of performance for the compensation of excessive charge is difficult. First, because the ad-hoc variables method does not require the fixing standard level of expenditure of each Canton. Second, as the beneficiary Cantons are free to spend on what domain that they prefer to. So that, an analysis which sets out a necessary benchmark can permit to evaluate the performance of this kind of transfer (Dafflon, 2010, p.31). Notwithstanding this difficulty, it is desirable to consider the amount per capita that is paid to beneficiary Cantons: In 2015, twenty three Cantons received an average amount of SFs 93 per capita. The Canton Grisons received the highest amount with SFs 716 per capita, Appenzell Rh-Int with SFs 545 and Appenzell Rh-Ext with SFs 358. Three Cantons receive the lowest transfers are: Soleure with SF 1, Saint-Gall with SFs 5 and Thurgovie with SFs 16.

A different way to view the performance is to consider the net transfer per capita of all the equalization transfer consisting of resource equalization, compensation for excessive charge and cohesion fund. The three Cantons of Uri, Jura and Valais receive the highest amounts per inhabitant with SFs 2 463, SFs 2 238 and SFs 1 792 respectively, while the three Cantons: Zoug, Schwytz and Geneva contribute the highest amounts with SFs 2 806, SFs 1 108 and SFs 550 correspondingly. Besides, other seven Cantons receive, each one an amount above SFs 1 000. More detail is figured in the last column of table 4.2.

Another way to evaluate performance of equalization mechanism is to compare the Gini coefficient before and after equalization. Gini coefficient is reduced from 0.15 to 0.11 in 2005 and from 0.17 to 0.11 in 2012. In comparison to the performance of Australia and Germany, before equalization the fiscal disparity between regions are 3 times higher than those of Australia and Germany, after equalization the redistributive effect remains modest. The same for ratio of highest to lowest tax-

raising equalization, this ratio is reduced from 3.8 to 2.5 in 2005 and from 4.3 to 2.6 in 2012 after equalization (Hansjörg Blöchliger, 2014, p.8).

#### 4.6 Conclusion

In general, the new system of financial equalization is economically and politically welcomed. First, it has reinforced the autonomy of Cantons by a clearer reassignment of public functions, discharge the overlapping of tasks between two layers of government and encourage the inter-cantonal cooperation. Secondly, the new equalization scheme has precisely separated the resource equalization and need equalization. In comparison to the old fiscal capacity index, the resource index is based purely on the representative tax system. The formula which is integrated in the process of calculation is more comprehensible and less complex than the old one.

Around 80 percent of equalization fund is allocated through resource equalization program. However, certain Cantons of «payers» claim that their parts of contribution should be reduced as all Cantons of «beneficiaries» have already reached the national average, though the total fund for three programs of equalization is relatively small (equal 0.78 percent of GDP). The problem raised again when the Council of States refused to cut down partially the contribution of Cantons with strong resource potential. In the other hand, the implement of new equalization scheme was reacted by a strategic behavior of both Cantons of contributors and of beneficiaries. In 2005, some financially weak Cantons have decided to lower their tax or abolish certain local taxes. As consequence, the fiscal competition is intensified.

Main principles and formulas are generally satisfied under economic view. However, some criteria are under political debates. Furthermore, interest groups and lobbyists find some ways to influence on the criteria such as the domain B of CCS where the altitude of 1080m may make no sense, as external expert comments «One cannot avoid the suspicion that this element has been chosen in an ad hoc

manner so as to advantage certain alpine Cantons compared to the actual situation. We do not understand this criterion of cantonal area above 1080 m alt. with a weight of 0.50 [...] It is not justified that the total area above this altitude be taken into consideration. What are the additional charges that glaciers and rocky mountain cost to these Cantons? » (Frey, 2001, p. 17, cited in Dafflon, 2004). Following to the new system of equalization at the national level, most of Cantons have already implemented their own equalization between the Municipalities. The principles are remained, however the formulas and criteria vary considerably from one to another Canton.

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