



# Building a Social Security retirement scheme

## Two design issues



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## Outline of the presentation

- I. Introduction : *Two design issues*
- II. Measuring pension rights: Annuities or Points ?
- III. The canonical approach to Social Security
- IV. Contribution prepayment techniques
- V. Relevance for Vietnam
- VI. Conclusion : *The design imperative*

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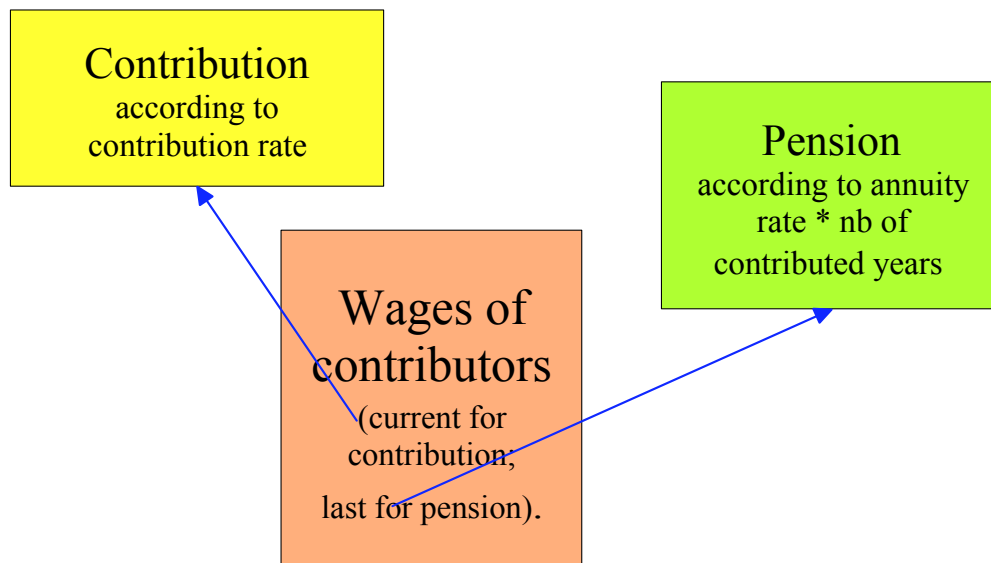
## Outline I : Introduction

- **Building a retirement scheme entails many challenges...**
  - Ability to register contributors and retirees
  - Organizational
  - IT capacity to compute contribution and rights management of individual account
  - Geographical coverage (ability to reach activities and people)
  - Transparency and governance
  - Etc..
- **... but one is foremost: the design !**
  - Once it is chosen, it can hardly be changed !
- This presentation addresses two design issues,..
  - ...building upon the numerous missions performed by SERVAC.

## Outline II. *Measuring pension rights*

- I. Introduction : *Two design issues*
- **II.a Wage based annuities ...or Points ?**
  - The measure of pension rights has to be consistent with the definition of contributions that will finance them. Hence two main designs are possible:
  - a. The older design, still widely used in Social Security schemes, is called "Defined Benefit" in English or "par annuités" in French:
    - ▶ The pension unit is the percentage of the *last* salary that will be paid from retirement till death, pending payment of each annual contribution. It is called the "*(wage) annuity rate*":
      - e.g. 2% per year, so that 25 years of contribution yield 50% of last salary.
    - ▶ The annual contribution is the product of the *current* salary by a fixed *contribution rate*. e.g. 15% of current salary each year.

## The (wage) annuity scheme is meant to guarantee a replacement ratio

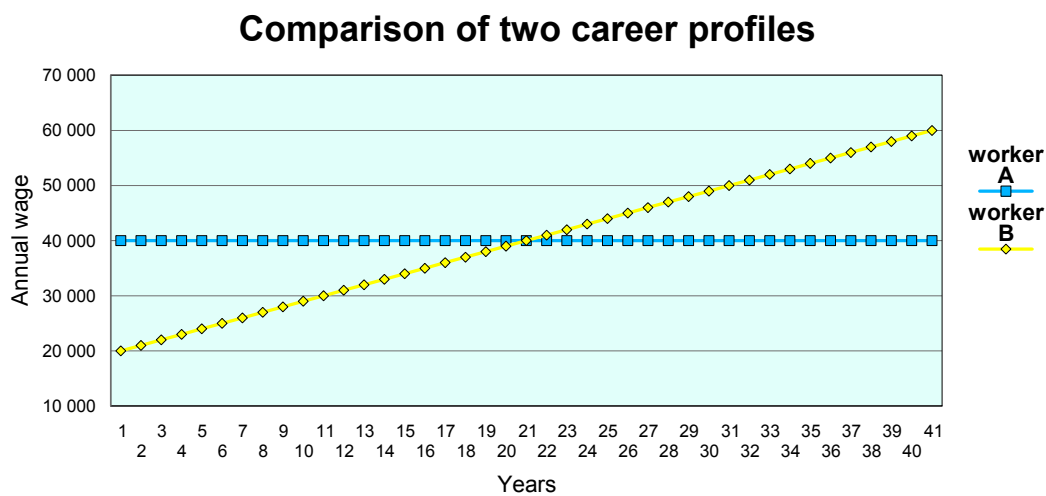


The wage (either current or last) is the key stone of this design.  
There is no direct link between contributions and pension rights.

## Monitoring an annuity scheme

- Given a replacement rate target (e.g. 50% for 25 years), the required contribution rate depends upon:
  - the dependency ratio : e.g. 4 contributors per retiree
  - the last/average current wage factor: e.g. 1.6 time
- According to :
  - required contribution rate =  $50\% * 1.6 / 4 = 20\%$
- 
- But, as dependency ratio and wage factor change over time, contribution rate needs to be periodically adjusted.

## Inequity of terminal annuities.



Over their career, A and B enjoy the same average wage (40 K\$) and therefore pay the same average contribution. Yet, with an annuity scheme where pension is based on final salary, B will get a pension 150% higher than A. With terminal annuities, "steep careers" benefit from "flat careers".

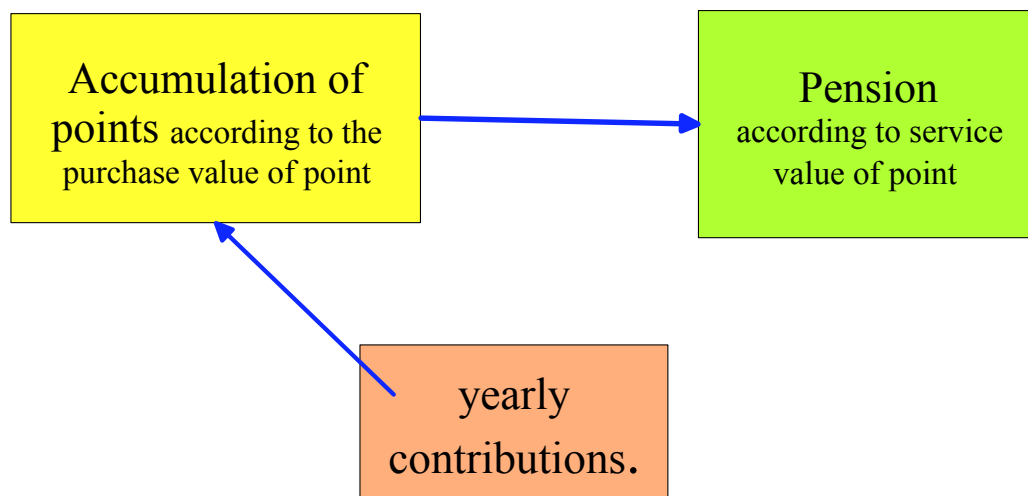
## Annuity schemes : Pro and con

- Annuity schemes have two main advantages:
  - Benefits are easy to understand and communicate upon.
  - No need to record individual contributions; only number of contributed years and final salary matter for pension assessment.
- ... and major draw backs :
  - Inequity : same total contributions may lead to different pensions; flat careers are penalized.
  - Change of employers or work interruption make track record complicated to keep.
  - Non wages earners and informal workers are not eligible.
- Annuity schemes are only well suited for Public servants:
  - the single employer simplifies track recording;
  - the low personal contribution blurs the inequity issue.

## Outline II: Measuring pension rights

- I. Introduction : *Two design issues*
- II.b Wage -annuities ...or Points ?
  - This more recent design is to overcome the draw backs of wage-annuities in managing private pension schemes.
  - To ensure equity among contributors, the point provides a direct link between contribution and pension.
    - ▶ As first a pension unit, the point is a life annuity expressed in real term. If its *service value* is 10\$, a pension of 120 points means that the retiree will get 1 200\$ per year till his death.
    - ▶ As a contribution unit, the point turns paid contributions into pension rights. Thus, if the *purchase value* of the point is 100\$, a contribution of 1000\$ will *earn* 10 points, to be added to the contributor' points account.
    - ▶ Upon retirement, the contributor will get a pension according to his total accumulated number of points. e.g. 10 points/year \* 25 years =250 points.

## The point scheme insures equity among contributors



With this design, "equal contributions means equal rights". The new credited points ads up into the contributors points' account.

## How attractive is a point scheme ? Look at the Yield

The "Yield" of a point scheme is the ratio of its service value by its purchase value.

$$\text{Yield} = \frac{V_s}{V_p}$$

where:

- $V_s$  is the service value of the point ;
- $V_p$  is the purchase value of the point .

The yield is inverse to the pay back duration of contributions:

e.g. a 10% yield means that contributions are paid back in 10 years of retirement; this duration can be compared to life expectancy at retirement.

## Monitoring a point scheme

▶ Yearly scheme parameters :

- ▶ Purchase value of point: 10 \$
- ▶ Service value of point: 1 \$

▶ The **current yield** is therefore :  $R_c = \frac{1 \$}{10 \$} = 10\%$

▶ To assess its sustainability, one only needs to compare it to the corresponding **equilibrium yield**, which is easily derived from the statistics of the scheme, namely:

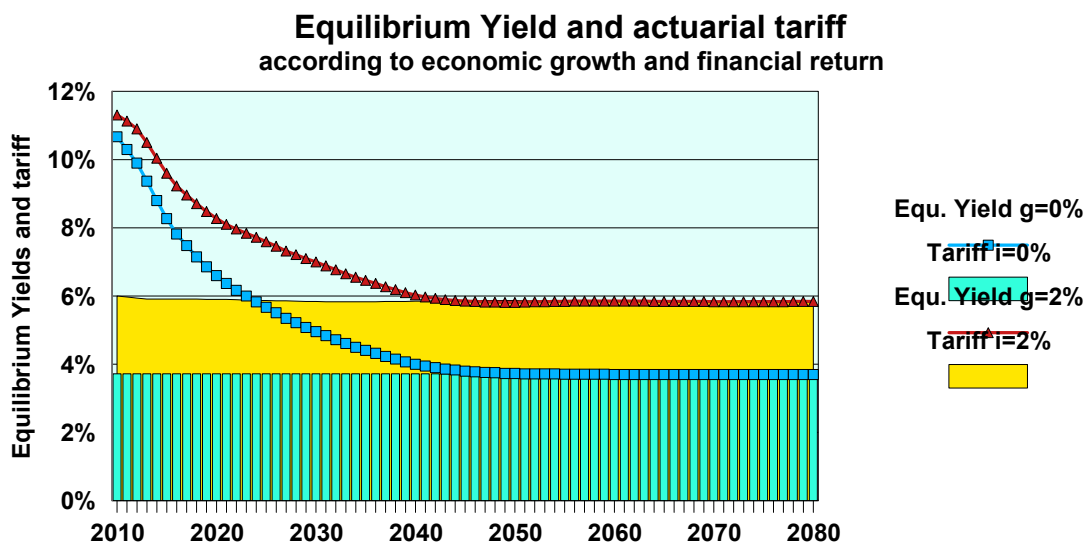
- ▶ average nb of points purchased by contributors : 20
- ▶ average nb of points paid to pensioners: 500 (= 25 years of career)
- ▶ dependency ratio: 3 contributors per retiree

▶ The **equilibrium yield** is given by:

$$R_{\text{équilibre}} = \frac{20}{500} \times 3 = 12\%$$

- ▶ As the current yield (10%) is less, the scheme is overbalanced.

## The equilibrium yield decreases according to the growth rate of contributions.



*The equilibrium yield decreases as the scheme matures. It converges towards the actuarial tariff with an interest rate ( $i$ ) matching the growth rate ( $g$ ) of contributions.*

## Point schemes : Pro and con

- Point schemes have many advantages:
  - **Contribution Equity:** all the contributors (resp. pensioners) enjoy the same purchase (resp. service) value of the point.
  - **Transparency:** contributors can assess their future pension from the accumulated stock of points in their account.
  - **Adaptability:** Any type of contribution may be turned into points. The scheme may cover non wage earners.
  - **Smooth financial monitoring:** the annual update of the parameters of the yield eases its match with demographic and economic evolutions.
- ... and one major operating constraint :
  - The updating of the contributors' points record should be done on line ("no rights without contribution and no contribution without rights").
- Point schemes are widespread for both compulsory and voluntary schemes, and for all types of activities.

## Outline III

- I. Introduction : *Two design issues*
- II. Measuring pension rights: Annuities or Points ?
- **III. The canonical approach to Social Security**
  - *The second design issue is organizational:*
    - *how turn in due contributions and the corresponding data flows needed to compute individual rights...*
    - *... At an acceptable administrative cost ?*
  - *The canonical answer is to rely on the employers' cooperation:*
    - *to declare insured workers, assess and collect their contributions, and consolidate them into regular payments.*
  - *This works well in the modern sector of stable enterprises...*
  - *... but is inefficient with the mobile sectors, which often are a growing part of countries' economic performance.*

## Meeting the organizational constraints of large scale old age insurance....

- A large scale old age insurance scheme entails:
  - Regular and stable contributions on one hand
  - Regular declarations of insured members, so that their individual pension rights may be properly computed and recorded.
- These data flows need to be processed together, for the least possible cost, which is a considerable organizational challenge :
  - collecting and checking (for accuracy and compliance) contributions,
  - recording and checking data pertaining to rights and making the appropriate computations.
- Such mass treatment is possible only if the data is aggregated and homogeneous. This is usually performed by employers,
  - in exchange for tax credit on their paid contributions.

## ... heavily rely on the employers' administrative goodwill.

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- **Usual social security schemes rely on the employer to perform aggregation :**
    - *He is responsible for collecting and paying contributions (employer's and employee's)*
    - *He is responsible for the declarations of insured members, recording rights.*
  - **This is particularly effective in the modern sector :**
    - *the number of employees per company is high*
    - *and so is their stability within the company (low turnover)*
  - **But ineffective for other sectors :**
    - *self-employed workers (one employee per company, though at least he can handle the declaration process)*
    - *informal workers (very high turnover of workers, far less able to individually cope with the declaration process) with no user willing to play employer.*
  - **Another form of organization is needed:**
    - *flexible enough to fit with informal activities,*
    - *standardized enough to minimize operating cost.*

## All workers are not wages earners

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- **Precarious workers or "mobile workers" ?**
    - *Fishermen, small farmers and farm laborers, domestic workers etc... :*
    - *individually, they may have precarious income, ...*
      - ▶ *and so do the firms which employ them ...*
    - *... but collectively the demand for their services is strong : whole branches of the economy rely on them (and those branches are growing).*
    - *They are highly mobile, and often hold several jobs simultaneously, which helps to cushion them from the precarity of their jobs.*
  - **They exemplify a new type of labor relation.**

## "Mobile" work is key to informal economies' performance...

- These populations share specific labor relations...
  - Specialized but segmented work effort, located by the user
  - coping with an uncertain demand (weather dependent)
  - risk sharing with the employer/user (ex: payment in % of the catch)
  - multiples employers/users without any durable ties with any one;
  - fluctuating incomes, but often globally significant
    - due to the overall economic competitiveness of the sector,
    - and their willingness to change employers and even activities.
- ... that makes them neither true employees nor self-employed
  - the multiplicity of missions and employers is similar to self-employment,
  - but unlike artisans or shop-owners, they often work as part of a team, and their place of work is decided by an employer.

## ... but no one is willing to "play employer"!

- Mobile workers are a special case :
  - their work relations are short and change often, they have no fixed or even primary employer.
  - But they do not view themselves as self-employed, able to take up the burden of their social contributions.
- The people who hire them do not view themselves as employers,
  - due to the transience of the link between them.
  - They refuse any individual responsibility toward them,
  - ... but are aware that the availability of mobile workers is key to the economic survival of their activity.
- A double challenge for old age insurance :
  - the mobile worker's work environment means a multiplicity of declarations and overly fragmented contributions,
  - for which nobody, worker or employer, is willing to assume responsibility.

## Outline IV

- I. Introduction : *Two design issues*
- II. Measuring pension rights: Annuities or Points ?
- III. The canonical approach to Social Security
- **IV. Contribution prepayment techniques**
  - *The mobile phone paradigm*
  - *Substituting earmarked branch taxes to employers' contribution*
  - *Using "tripartite contribution vouchers" for employee' contribution*
  - *The points mechanism makes prepayment acceptable*

## The mobile phone paradigm

- When cell phones were introduced, companies required subscriber to have a bank account, and marketed them to people with a fixed income.
- But the invention of prepaid cards changed that paradigm:
  - ▶ it eliminated any solvency concern on the part of the cell phone company,
  - ▶ and thus allowed them to be marketed to people with no bank account and no fixed income;
  - ▶ mobile phones have been spectacularly successful in the informal economy.
- In the same way, prepaid contribution could make a big difference in the social coverage of the informal economy.

## Contributions from three different sources :

in DT	Employer	Employee	total
old age	0,30 / day	0,12 / day	0,42 / day
health	0,12 / day	10 / quarter	0,24 / day
total	0,42 / day	0,24 / day	0,66 / day

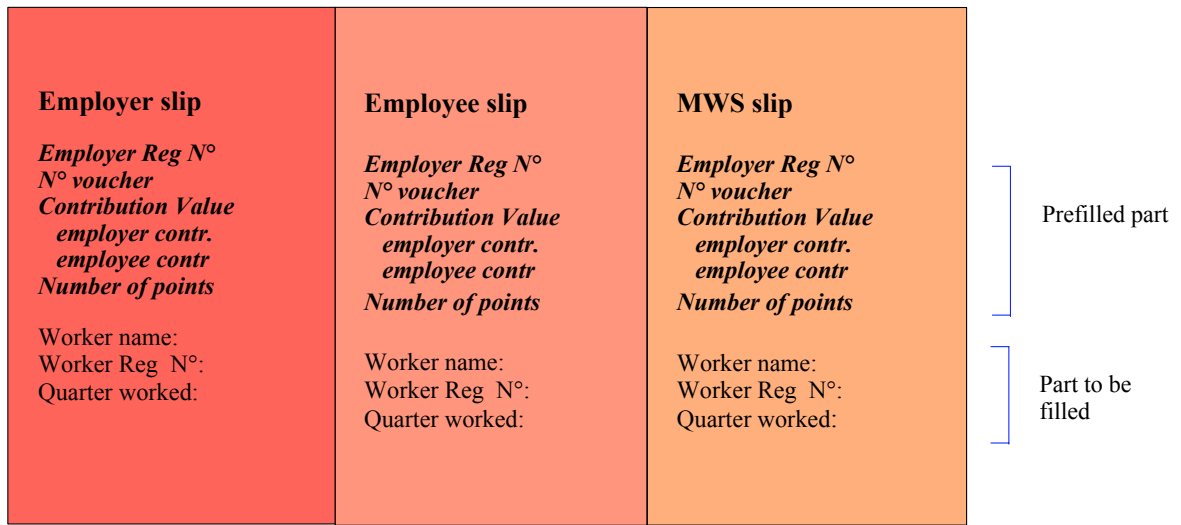
prepaid through tripartite voucher (pointing to 0,12 / day in Employee column)  
 through the branch tax (pointing to 0,42 / day in Employer column)  
 paid by the employee if not otherwise covered (pointing to 10 / quarter in Employee column)

The scheme is financed through three separate sources which echo the familiar distinction between activity branches and employer/employee contributions

## Earmarked branch taxes as employer' contribution

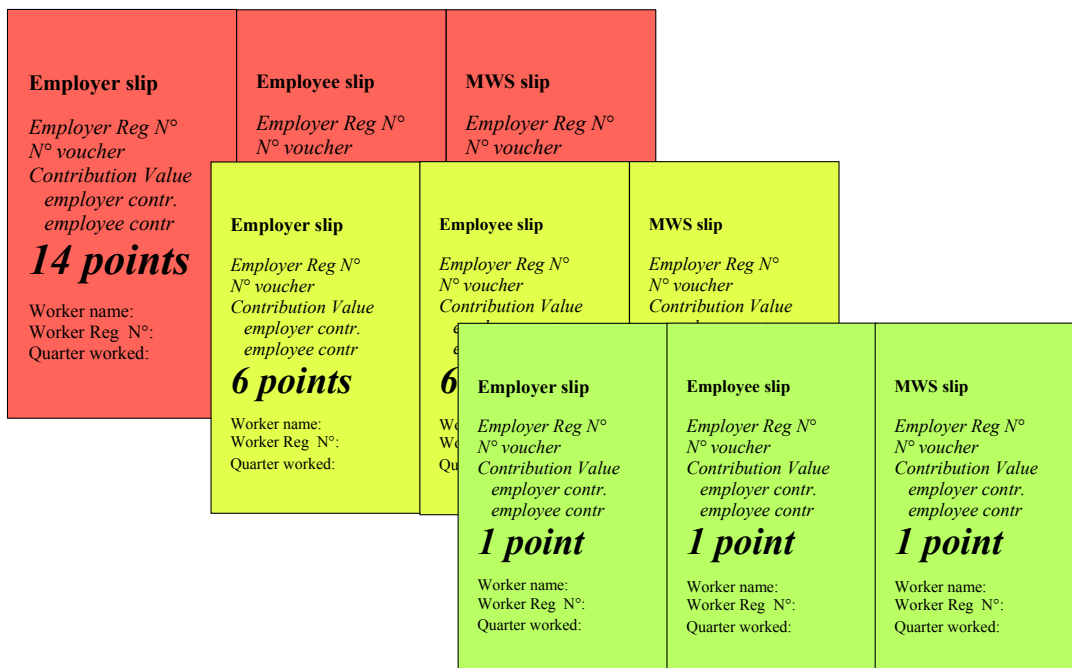
- Employer centered contribution collection does not work.
- Employer contribution can be replaced by a collective contribution,
  - taking the form of a branch tax,
  - and freeing the employers from having to declare employees and collect employee contributions.
- Thus creating a new mobile worker scheme (MWS),
  - cumulative with existing schemes,
  - strictly contributive,
  - with pensions rights accrued as points
  - and a simplified recording through the use of tripartite contribution vouchers.

# Tripartite contribution vouchers as employee' contribution



The vouchers are intended to be read by optical readers.

# Three kinds of vouchers with different colors and values



## **The tripartite voucher makes prepayment administratively feasible**

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- The tripartite voucher takes care of most of the paperwork :
  - a voucher has legal status as a short time work contract.
  - it is bought (in advance) by the employers and given to the employee with his wages.
  - the employee brings his vouchers to MWS when convenient and the equivalent rights are awarded, for a minimal operating cost.
- It also takes care of the need to control employee registration and employers' payment of employee's contributions
  - being prepaid and of fixed value, it makes certain the correct contributions are paid.
  - the employee are registered once, without need to monitor their current employer.

## **The point mechanism makes the prepayment of vouchers acceptable**

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- The points system is ideal to record small and potentially irregular contributions.
  - The link between contributions and rights is transparent;
  - There is no threshold; even a small contribution means an increase in pension.
- Awarded points accrue on an individual account at MWS.
- When the pension is liquidated, the annual pension is equal to the number of accrued points multiplied by the service value of the point.
- The service value of the point is based on what regular employee with similar contribution would receive.

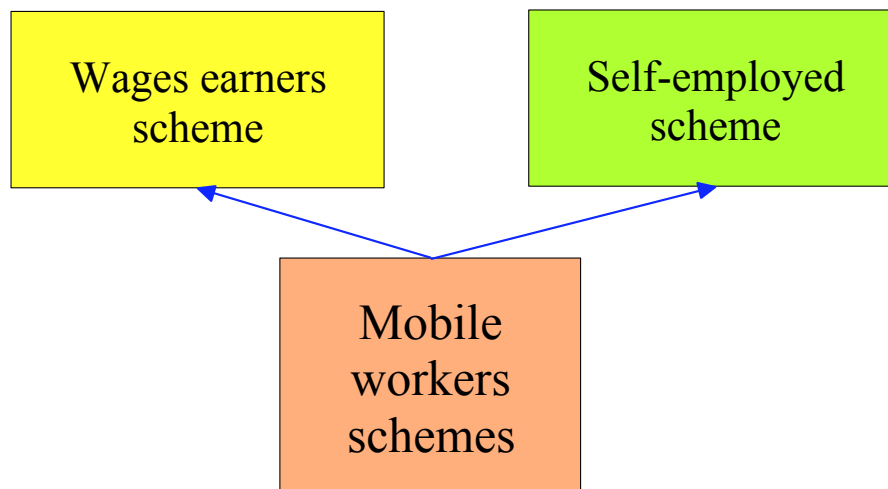
## **Conclusion : *A new form of organization around prepayment of contributions***

- The goal of MWS is to extend coverage to "mobile workers", building on their new type of labor relation.
- MWS introduces collective financing (through a branch tax) in exchange for releasing the "employers-users" with any obligation of employees' declarations.
  - The use of tripartite contribution vouchers introduces standard contributions and rights; this allow for prepaid contributions, and their efficient mass treatment.
  - The points mechanism insures that every contribution will yield similar pension rights; It makes prepayment acceptable.
- MWS's new organization is well adapted to the labor relation and needs of the informal sector.

## **Outline V: *Relevance for Vietnam***

- I. Introduction : *Two design issues*
- II. Measuring pension rights: Annuities or Points ?
- III. The canonical approach to Social Security
- IV. Contribution prepayment techniques
- **V. Relevance for Vietnam**
  - *Two design issues have been delineated:*
    - *Expressing pension rights in annuities or points ?*
    - *Organize contribution collection along the "employer centered" canonical approach or through innovative prepayment techniques ?*
  - *These options are to be combined according to Vietnam economic, demographic, and social specificity's.*

## Various schemes matching various labor relations, unified by the same point ?



The mobile workers schemes could be introduced as first step towards more traditional (wage earners or independent workers) schemes, all operating in points.

## Conclusion : *Social security design options are difficult to change.*

- Building a nation' social security entails major design options, especially among:
  - type of schemes, e.g. annuities or points in old age insurance
  - organization modes of contribution collection, e.g. "canonical" or prepayment.
- These choices will heavily bear upon the institutions in charge, on many interrelated grounds, ranging from:
  - legislative, to administrative, monitoring, and governance.
- It is recommended to carefully weight the pro and con of each of these options,
  - in light of the country' present and future social and economic conditions,...
- ... before embarking on a lasting journey !