Finance (Basic)

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Personal Finance

- ❑ Monetary decisions of an individual (family).
- ❑ Analyses how the individuals (family unit) obtain, budget, save and spend money.
- ❑ The personal income could be allocated towards **expenses**, **saving**, debt repayment.

Sample budget

Example of budged allocation

Category	Monthly amount	Annual amount	Percentage
Housing			
Food			
Automobile			
Tax			
Insurance			
School			
Medical			
Clothing			
Saving			

What happened if the total expanses are not equal to the total income?

The phases of personal finance by age

- Phase of low saving
- Phase of debt
- Phase of investment
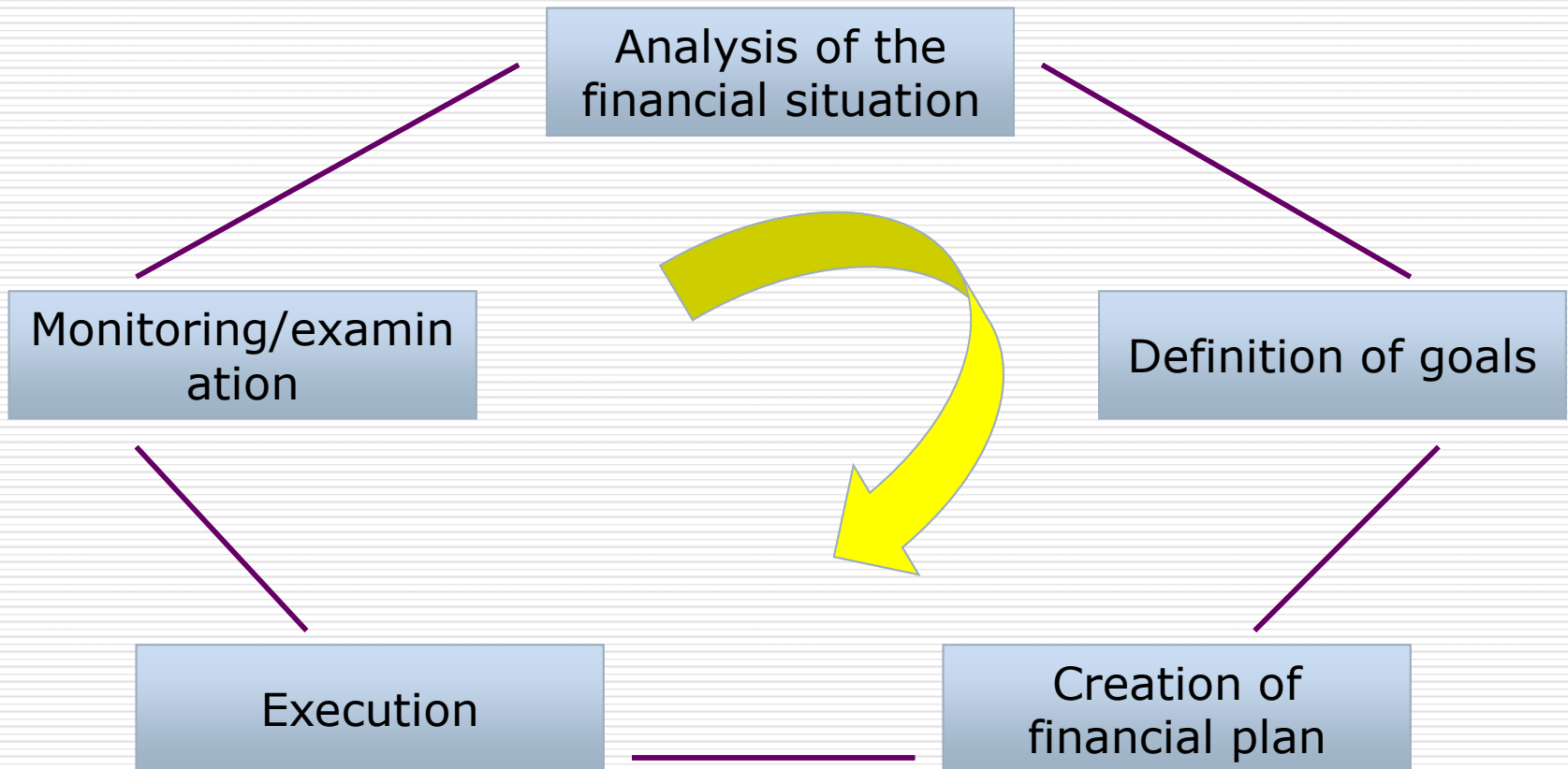- Phase of use accumulated wealth

The phases of personal finance by age
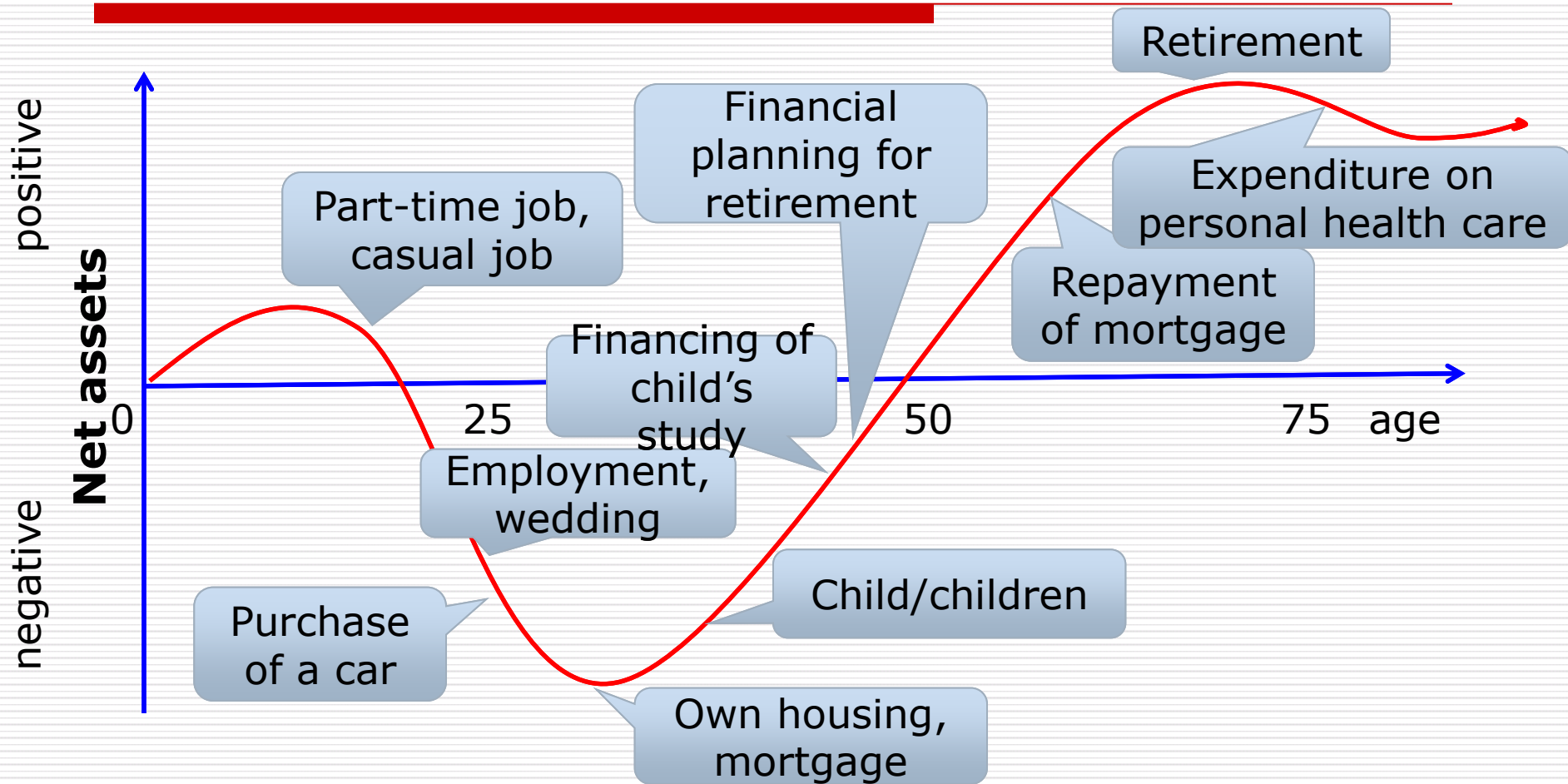
Personal financial planning

- ❑ Assessment

- ❑ Setting goals

- ❑ Creating a plan

- ❑ Execution

- ❑ Monitoring/Reassessment

Personal financial planning

Analysis of the financial situation

Monitoring/examination

Definition of goals

Execution

Creation of financial plan

Saving

❑Regular payment over time

❑The task is to identify FV

The relation between IP and PP:

▪IP = PP

▪IP > PP

▪IP < PP

Annuity in within one interest period:

  ▪ *Ahead a period*

  ▪ *After a period*

Linear interest in one IP

$$S_x = m \cdot x \cdot \left(1 + \frac{m+1}{2 \cdot m} \cdot i\right)$$

S … total amount saved
m … *number of deposits*
x … *amount of money*
i … *interest rate*

Arithmetic serie, Geometric serie

$$S_A = \frac{m}{2}(a_1 + a_m) \qquad a_n = a_1 + (n-1)*d$$

$$S_G = a_1 \frac{q^n - 1}{q - 1} \qquad a_n = a_1 * q^{n-1}$$

Long-term Saving

$$S' = a \cdot \frac{(1+i)^n - 1}{i}$$

a … annuity (a regular payment of a same amount)

Combined Saving, or IP>PP

Ahead a period

$$S = m \cdot x \cdot \left(1 + \frac{m+1}{2 \cdot m} \cdot i\right) \cdot \frac{(1+i)^n - 1}{i}$$

After a period ?

Retirement plan

Pension is a way to ensure a regular income for people, which are no longer earning a regular income from employment.

Retirement plane (individuals, employers, unions, insurance companies, government).

The main types of income in Retirement plan

- ❑ <u>Immediate income:</u>
  - ▪ *Ahead a period*
  - ▪ *After a period*
- ❑ Deferred income
- ❑ Income paid m-times a year
- ❑ Perpetual income

- ❑ **The task is to identify PV**

Immediate Income

Ahead a period

$$D = a \cdot \frac{1 - v^n}{v \cdot i}$$

v … *1/(1+i)*

D … *present value of total income*

After a period

Income paid m-times in one IP

Ahead a period

$$D = m \cdot x \cdot \left(1 + \frac{m+1}{2 \cdot m} \cdot i\right) \cdot \frac{1 - v^n}{i}$$

After a period

Deferred Income (ahead a period)

$$K = m \cdot x \cdot \left(1 + \frac{m+1}{2 \cdot m} \cdot i\right) \cdot \frac{1 - v^n}{i} \cdot v^k$$

v^k … postponement of income payment

Perpetual Income

Immediately

$$D = m \cdot x \cdot \left(1 + \frac{m+1}{2 \cdot m} \cdot i\right) \cdot \frac{1}{i}$$

Deferred

Repayment plan

Consists of:

Debt, Annuity, Interest, Amortization

Amortization of debt:
- ❑ Equal annuity
- ❑ Unequal annuity

Thank you for your attention