

The Knowledge Bank

Outline of a System to Channel Financial Resources into Human Capital Investment

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Abstract

This paper aims to present a description of the system underlying the scheme for investment in human capital that has been proposed in Saavedra-Rivano (2016). Although we do not intend to repeat here the details of that scheme let us recall, for the sake of completeness, that this scheme is based on the securitization of the human capital accumulated by individuals from their birth until adult age. The securities generated in this way are channeled, through a central agency, the Knowledge Bank, to the financial system and acquired by investors. In principle, these investors are working age individuals of the same population, who are saving for their retirement although, depending on the level of financial development of the country, they could include other investors. As detailed in Saavedra-Rivano (2016) the main interest of the scheme lies in its capacity to unleash the full potential of a country and in the progressive equalization of opportunities that it implies. There are other positive points about the scheme and the interested reader is referred to Saavedra-Rivano (2016).

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1. *Introduction*

This paper aims to present a description of the system underlying the scheme for investment in human capital that has been proposed in Saavedra-Rivano (2016). Although we do not intend to repeat here the details of that scheme let us recall, for the sake of completeness, that this scheme is based on the securitization of the human capital accumulated by individuals from their birth until adult age. The securities generated in this way are channeled, through a central agency, the Knowledge Bank, to the financial system and acquired by investors. In principle, these investors are working age individuals of the same population, who are saving for their retirement although, depending on the level of financial development of the country, they could include other investors. As detailed in Saavedra-Rivano (2016) the main interest of the scheme lies in its capacity to unleash the full potential of a country and in the progressive equalization of opportunities that it implies. There are other positive points about the scheme and the interested reader is referred to Saavedra-Rivano (2016).

The following sections will offer a detailed description of the operation of the scheme and of the main elements constituting the system which makes this operation possible. Section 2 is about the stages in the lifecycle of individuals: formative years, working age, retirement. Section 3 deals with the Knowledge Bank, its role, management and activities and section 4 and 5 explains the respective roles of the productive system and the financial system in this system. A concluding section offers final remarks about the sustainability of the entire system and related issues.

2. *The lifecycle of individuals*

We will consider three different stages encompassing the entire lifecycle of individuals: formative years; working age; retirement. These terms are intended to provide a simple characterization of the main aspect of each stage but they may be misleading. As a matter of fact, it is important to keep open the possibility that these stages might be overlapping, so that during some “transition” periods young individuals may be dividing their time between study/training and work and mature individuals, past a defined retirement age, may be working part of the time. And, at any rate, individuals may want to accumulate human capital throughout their entire life.

Formative years. During this period, starting from birth and ending at a specified age, all individuals are endowed by the system with purchasing power for goods and services that will be needed for building up the skills and capabilities which will make of them active members of society and the labor force. These goods and services include education and health services and materials but may include other (in the ideal system all) items needed for their upbringing, such as for instance food and clothing. The implementation of this endowment takes place through the creation, for everyone at birth, of an individual account in the Knowledge Bank (see next section) which will be used to settle transactions. The amount credited to that account follows an expected spending profile by age and spending category and can be adjusted depending on the skills revealed by the individual. Thus, for instance, an individual able to be admitted to medical school will have a higher credit than another choosing a career as a bank

teller. The credit in the account can only be used through transactions and it extinguishes if not used during the correct period.

Working age. During this stage individuals will start using the skills acquired in the earlier stage and become able to sustain themselves. Disposition by them of their income will be divided into three main categories: subsistence expenses for themselves, repayment of debt to the Knowledge Bank, and saving for their retirement. It is to be noticed that no human capital formation expenses are necessary for their offspring as the latter will be endowed with their own spending power for that purpose. Repayment of the debt to the Knowledge Bank will be distributed through a large part of this period to be compatible with the other uses of their income. Savings for retirement age can take the form of investment in the human capital (HC) securities sold by the financial system and corresponding to the debt of the next (children) generation.

Retirement years. During this period individuals will draw on their savings, selling the HC securities they own back to the financial markets, and use the proceeds of those sales for their own subsistence expenses. They can also, of course, take part-time jobs to supplement their income.

3. *The Central Agency (Knowledge Bank)*

The role of the Knowledge Bank, the central agency supervising the whole scheme, is complex and multi-faceted. In the first place, it conducts all operations needed to make the scheme work, connecting beneficiaries with providers of goods and services, and interacting with financial markets and institutions. Secondly, it supervises the smooth functioning of the system. And, finally, it ensures the privacy and security of transactions and the financial soundness of the entire scheme.

The responsibilities assigned to the Knowledge Bank and the authority it yields make it necessary for it to be a government institution. To protect it from political interference it should have a management system like that of an independent Central Bank, with a highly professional staff. In the case of countries of a low level of development, lacking financial resources to invest in human capital and who will need to sell their HC securities internationally, international development banks may be called to advise the management of the Knowledge Bank.

Among the operations conducted by the Knowledge Bank we should consider

- Management of transactions between individuals and providers of goods and services for investment in human capital. These transactions will be like credit card transactions, whereby the individual will receive the good or service in question, the provider will be paid (by the Knowledge Bank), and a debit item will be recorded in the individual account of the beneficiary of the transaction.
- Anonymization and bundling of individual debts: through this process the individual debts will be decoupled from their names and bundled together in large blocks of the same maturity.

- These blocks will be sold to designated financial institutions, who will later resell them in the secondary market. In the case of countries of low level of development, these institutions may include international financial institutions and international development banks may play a role as guarantors or buyers.
- Management of the repayment subsystem whereby beneficiaries pay back their accumulated debt during their working years. Repayment will take place in a way not unlike income tax withholding.

4. *The productive sector*

The productive sector, together with the human capital embodied in individuals, is the backbone of the economic system. In the present scheme, it plays at least two important roles. First, it provides the goods and services necessary for the formation of the human capital that is being accumulated in individuals. In the resulting commercial transactions, it receives, in exchange for the goods or services provided, a credit authorized by the beneficiary towards his or her individual account. This credit will be converted instantaneously into payable funds by the Knowledge Bank, similarly to a credit-card transaction. And second, it is a source of employment and income for adults who will have completed their basic formative period.

5. *The financial system*

The financial markets play a fundamental role in the working of this system by acting as essential intermediaries, together with the Knowledge Bank, between beneficiaries and investors. Primary designated financial institutions will acquire large blocks of securities from the Knowledge Bank. These financial institutions will create “HC securities” of appropriate sizes and maturities which will be sold to smaller financial institutions and, through them, attract the interest of investors. The financial markets will be important in determining the interest rates that these securities will yield. In developed and middle-income developing countries final investors will be primarily working age individuals saving for their retirement. In low-income developing countries, this category of investors may not be sufficient to satisfy the large supply of HC securities. In this case, international financial markets will play an important role and the primary designated financial institutions will include international development banks.

The financial markets will also play a role in the repurchase of HC securities which will be sold by retirees and in their final redemption upon maturity to the Knowledge Bank.

The diagram in the next page offers a glimpse at the various flows of funds, securities, labor services, and goods and services involving the various actors in the scheme (individuals, the productive sector, the financial system and the knowledge bank) through the entire lifecycle of the individual.

6. *Final remarks: sustainability of the scheme*

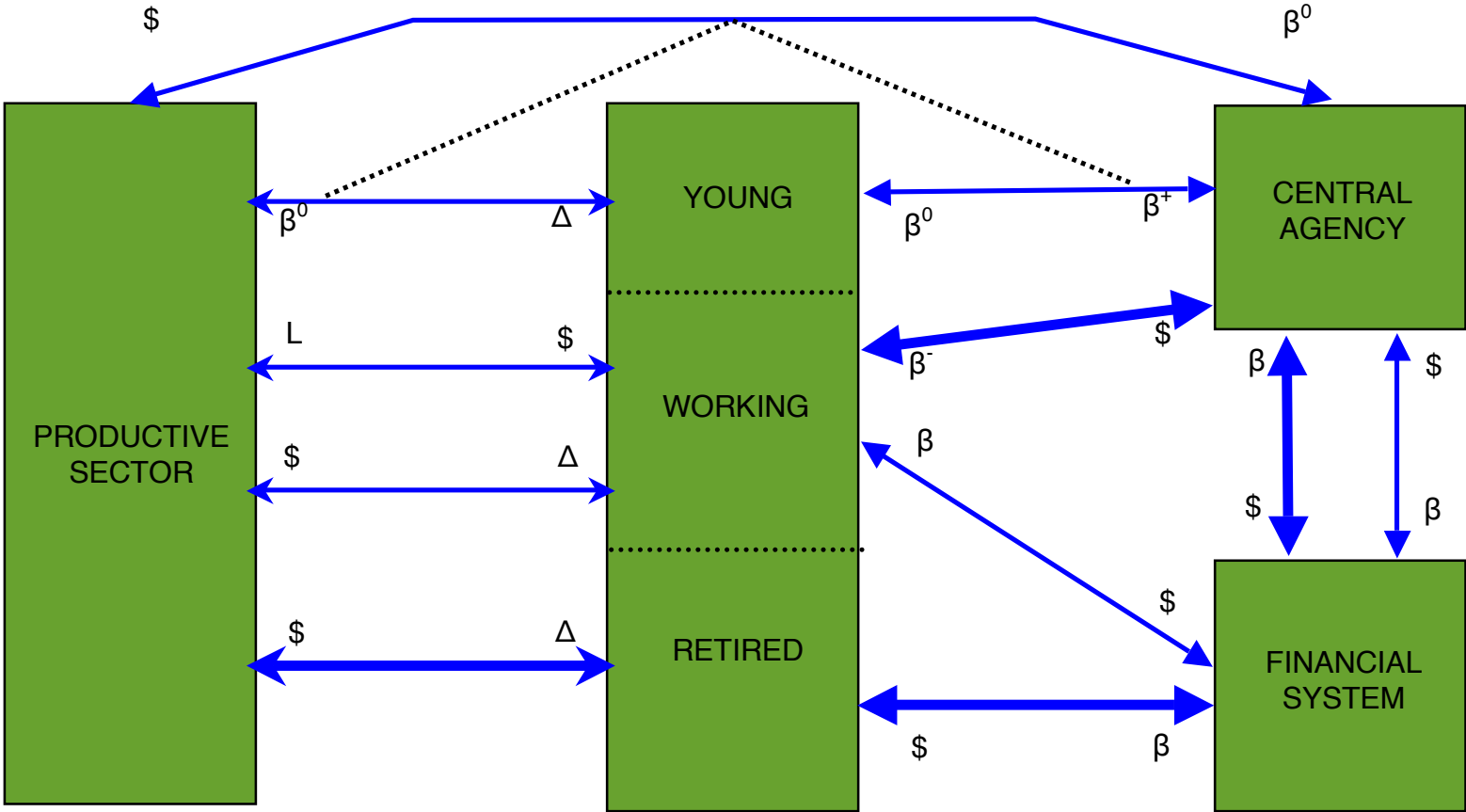
As said before, one of the roles of the Knowledge Bank is to ensure the soundness and sustainability of the scheme. Especially during the first years it will be important to dispel any doubts about financial risks for investors. To achieve this result, a system of guarantees may have to be established during the first years of operation. In the case of developed and middle-income developing countries a fund could be easily established by the central government, perhaps using resources from existing pension funds. In the case of low-income developing countries, a solution would be to convert official development aid in guarantees for the acquisition by international financial institutions of the HC securities created by the Knowledge Bank.

Some other necessary elements of a sound system are: the creation of an insurance system that will take care of the unrecoverable debts that will take place in some exceptional situations (such as, for instance, premature death or incapacity of a beneficiary); establishment of a mandatory repayment system that will allow for the automatic collection of the debt from all types of income; and the creation of legal mechanisms that will deter repayment evasion.

References

Saavedra-Rivano, Neantro (2016), "Financing Human Capital: Families and Society," *Cadmus* 3 (1), 36-47.

FLows ASSOCIATED WITH THE CREATION AND CIRCULATION OF HUMAN CAPITAL (HC) SECURITIES



- Δ Goods and services
- L Labor
- \$ Money
- β (anonymous) HC securities
- β⁰ (named) HC purchasing power titles
- β⁺ Accual of (named) HC securities
- β⁻ Redemption of (named) HC securities

Although all flows take place at all times, flows represented by thin lines are associated with a given cycle and those by thick lines correspond to the next cycle (of the same generation)

Dotted lines connect flows tied to each other