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Abstract

This Policy Letter outlines a pandemic insurance solution through a pandemic-related “Insurance Linked Bond”. It would be originated by governments, with a principal amount to cover significant costs resulting from a pandemic. These bonds, which would be traded on a secondary market, generate a risk-adequate return for private and institutional investors that is financed through the insurance premiums paid by the public domain. In case of a pre-defined pandemic trigger event, the principal of the bond becomes available for the originating governments to cover pandemic-related costs. Through this approach, governments can insure themselves against future pandemic-related risks, while funding comes primarily from private and institutional investors.

I. Introduction

We are presently in the middle of a crisis, in which financing and transferring hundreds of billions of euros to mitigate the economic consequences of the “Corona lockdown” are at the center of the political discussion. Nevertheless, it is necessary to already **look beyond the current crisis and be better prepared – also in financial terms – for the next pandemic outbreak.**

The consequences of an ex-post financing of the crisis are increased indebtedness on the private and/or the public side, and waiving necessary (infrastructure) investments, combined with possible intergenerational unfairness as to bearing the burdens in the long run. In contrast, **insurance solutions** covering the economic consequences of pandemic outbreaks would be **desirable**, because insurance indemnity payments cover losses without leading to future burdens, neither for the beneficiaries, as it would be the case through providing loans, nor for the tax payers who have to finance crisis-related government spending.

Why is there a **lack of private pandemic insurance** solutions then? The reason does not lie in underestimating the risk exposure by insurance purchasers in the past. It rather lies in the nature of

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the pandemic risk that poses an existential threat to insurance companies: pandemic risks are cumulative risks that make traditional risk pooling impossible because they affect many or all policyholders at the same time. Thus, insurers face the risk of under-reserving potential claims. Additionally, a pandemic outbreak typically goes along with a decline of asset prices on the capital markets. This means that insurers face a “double hit”, one on their insurance underwriting side and one on their investment side, possibly resulting in financial distress. Therefore, insurers have been and will be reluctant to offer pandemic insurance. And if they did, it could only be at a very high price. High insurance prices combined with the hope for government support will probably keep the demand for pandemic insurance at a low level. Therefore, it is doubtful whether we will see a large private pandemic insurance market in the future.

Yet, through a **Public Private Partnership** a viable **pandemic insurance solution** is feasible. It enables to partly substitute ex-post debt-financed government spending by an ex-ante financed insurance solution. We suggest setting up a **Pandemic Partnership Bond** solution to cover costs related to major pandemic outbreaks as an ex-ante insurance solution.

The **Pandemic Partnership Bond** is not a new invention; it is an arrangement in the sense of “**Catastrophe Bonds**” that have successfully evolved as “**Alternative Risk Transfer**” solutions during the last decades. More specifically, in 2017 the World Bank issued a Pandemic Bond that can, to a large extent, serve as a blueprint for the suggested solution. The difference between the suggested Pandemic Partnership Bond and the World Bank Pandemic Bond is that governments originate the bonds, either as single states or as a collective, in our solution. The bond investors, very importantly, do not bear any sovereign risk, since the Pandemic Partnership Bond transfers only a specified pandemic risk to the investors in return for risk-adequate remuneration.

II. Basic Structure of a Pandemic Partnership Bond

As an example, EU member states as the “sponsors” or “originators” issue a **Pandemic Partnership Bond** with a given principal amount and maturity, e.g. 3-5 years. Typically, a special purpose vehicle is set up for the transaction. The principal amount should be high enough to cover significant costs related to a pandemic outbreak; in a first step it could possibly lie in a range between 20 to 50 billion euros. The bonds’ issuance proceeds are transferred into a trust fund. At the same time, the originators of the bond also pay their “insurance premium” into the trust fund. Thus, the Pandemic Partnership Bond solution is fully funded from the beginning, and the originator governments have no access to the capital raised.

The trust fund invests the capital under a **specified investment strategy**. It should target a minimum safety level in terms of liquidity and guaranteed payoffs. To prevent possible pressure for investing in government bonds, they should be excluded from the investment universe.

The Pandemic Partnership Bond would be a “**principal-at-risk**” bond. This means that if a specified pandemic risk materializes, the principal (and, possibly, outstanding interest payments) is not paid back to the investors. The retained funds are then made available to the originator government(s).

Whether or whether not the principal has to be paid back should depend on **multiple triggers**. Potential triggers can be the official declaration of a major disease outbreak by the World Health Organization (WHO) and the number of disease cases within a given time period (e.g. two weeks) across a given geographic area (e.g. EU member states). For a Pandemic Partnership Bond that is going to be issued in the near future, one would probably **exclude COVID-19 diseases** as triggering events.

There are many more potential parameters conceivable for creating a **parametric triggering mechanism**, for instance a specific drop in GDP levels; the level of complexity should be taken into account, however. The main aim of introducing a multi-trigger mechanism is to **reduce moral hazard** of the originator governments as to “pulling the trigger”, and thus to reduce the risk premium required by the investors.

After their issuance, the bonds can be traded on a **secondary market**, which makes them liquid investments. As long as the pandemic risk does not materialize, the **investors receive a risk-adequate return**, and when the bond expires the principal is paid back. The above mentioned “**insurance premiums**” that are paid into the trust fund by the originator governments **are needed to generate risk-adequate return** for the investors. The rate of return typically includes two components. The first component is a basic interest rate as the investors’ compensation for lending money. Such a rate should be a dynamic money market rate like the LIBOR. The second component is a fixed risk premium for the emergence of a pandemic outbreak, which has to be high enough to compensate the investors for assuming the systematic risk exposure behind a pandemic outbreak. Investors get compensated for the risk of losing their investments in “bad times”, that is in times when their other investments also perform poorly.

If **several governments** were the originators of a Pandemic Partnership Bond, the **share of the funds** made available to them in the event of a pandemic would equal the **share of their initial “insurance premiums”**. They get what they pay for. It is, of course, also possible that some originators support other governments by paying their insurance premiums. Such subsidization, if necessary, would have the advantage of being a transparent and direct support, in contrast to issuing euro bonds in an ex-post loss financing scenario, for instance. The wealth transfer between the member states resulting

from joint debt instruments is difficult to measure and is accompanied by unwanted incentives towards extending public debt volumes.

III. Further Points of Discussion

Two **pandemic bonds** worth a total of US-\$320 million, similar to the proposed Pandemic Partnership Bond, were issued by the **World Bank** in **2017**. These bonds were set up to provide funds to low-income countries and cover the potential outbreak of six diseases. The bonds could be separated in two risk classes. Class A with 6.5 per cent risk premium plus Libor and a maximum loss of 16.7 per cent of the principal, and class B with 11.1 per cent risk premium plus Libor and a maximum loss of the total principal. These bonds have been **criticized for their high complexity** (the prospectus contains almost 400 pages), **the low amount of funds and relatively high financing costs** compared to sovereign debt. This criticism highlights general problem areas that we discuss in the following in the context of a Pandemic Partnership Bond.

The **high level of complexity** mainly stems from calculating the risk premium and the triggering factors that allow the originator to keep the principal. As pandemics happen rarely, there is a high level of parameter uncertainty when calculating the risk premium. Thus, a certain level of complexity is unavoidable and cannot be reduced.

However, the **choice of the triggering factors** can reduce complexity. Only as few triggers as possible should be used. It might be sufficient to start with two triggering factors, which are the declaration of a major disease outbreak by the WHO and the number of disease cases within a given time period (e.g. two weeks) across a given geographical area (e.g. EU member states). This reduces the scope of moral hazard in terms of any influence on the WHO's decision process, as the numbers of disease cases are independently assessed.

The **volume of funds** to be raised by a Pandemic Partnership Bond depends on the purpose for which the funds should be used. For example, should the funds be used to cover costs of the health system due to the disease outbreak or to back up unemployment costs? As COVID-19 has shown, pandemic-related costs can become tremendously high and cannot be easily assessed in advance. Hence, a Pandemic Partnership Bond is not the appropriate tool to fully cover potential pandemic costs. Moreover, as such a risk securitization mechanism depends on the investors' demand for the bond, the amount of capital to be raised is naturally limited.

Another strand of criticism relates to **the relatively high financing costs** of a pandemic bond compared to government debt. As the interest rate of a pandemic bond necessarily includes a risk premium for covering the systematic risk of a disease outbreak, the interest rate is by nature higher than interest rates on public debt, which covers the relatively low levels of sovereign default risk, depending on the

issuing government, of course. However, this perspective should be extended by several points: first, raising sovereign debt is a process that takes some time, for example, as it needs to be approved by parliaments in advance. This delay, in comparison to ex-ante financed pandemic bonds, might cause additional costs for society, for example, if firms default on a large scale because they quickly run out of money. Second, issuing new debt has to be refinanced in the long term by means of higher tax rates or higher debt costs. Thus, the burden of higher debt levels is typically borne by the younger generations, which constitutes a problem of intergenerational fairness. Therefore, the difference between the costs of a Pandemic Partnership Bond and sovereign debt as instruments to cover costs of pandemics is smaller than measured by the mere difference between the pandemic bond's risk premium and sovereign debt rates.

IV. The Demand Side

The Pandemic Partnership Bond can be an **interesting investment for different investor groups**:

Institutional investors that search for yield in the present low interest rate environment may be interested in adding a Pandemic Partnership Bond to their portfolios, especially because its rate of return is fairly priced.

Private Investors may be interested in investing relatively small amounts of money (for example €1,000 – €10,000). From their point of view, the investment can be interpreted as a “bet” with a relatively high return, on the one hand, combined with the risk of a complete loss, on the other. Such loss is bearable for a small investment volume, and at the same time the lost money is used for compensating pandemic-related costs. Thus, even the lost money can, to some extent, return to the investors.

From the originator governments' point of view, the Pandemic Partnership Bond is an opportunity to **utilize people's wealth** instead of income (via income taxes) for funding pandemic-related costs. Yet, it is not a compulsory funding scheme via a wealth tax. Instead, **funding is provided on a voluntary basis** in exchange for a risk-adequate return.

V. Conclusion

Pandemic Partnership Bonds are **well-suited instruments for financing future pandemic-related risks**.

Their main advantages are:

- They are a **genuine insurance solution**: for the beneficiaries there is no need to repay the money later on.
- They are **fully funded** from the outset, that is ex-ante to a pandemic outbreak.

- **Funding** mainly comes **from private investors** and **partly** (as insurance premiums) **from the public side**.
- They are a **fair investment opportunity** for a broad range of investors, yielding high, risk-adequate returns.
- The **rates of return only reflect the riskiness of the pandemic** and not the solvency status of the originator governments.