

of what the banks are capable of holding, rather than simply appealing to their intentions, as is the rule under the current mark-to-market regime .

Second, the fact that liabilities have long duration means that the short-term funding that is prevalent in the long intermediation chains will be less likely to be employed provided that the covered bonds are held directly by households or by long-only institutions such as pension funds and mutual funds. The long duration of such securities would be a natural source of sought-after duration for pension funds who wish to match the long duration of their pension liabilities. Household savers would also find such products a good substitute for government bond funds. The shortening of the intermediation chain in this way will have important benefits in terms of mitigating the fluctuations in leverage and balance sheet size in the financial boom bust cycle.

Covered bonds have been a familiar feature of many European countries, especially in Denmark (with its mortgage bonds) and Germany (with its Pfandbriefe). But to date, over twenty countries in Europe have some form of covered bonds backed by laws that underpin their role in the financial system. Packer et al (2007) is a recent overview of the covered bond system, who report that as of mid-2007 the outstanding amount of covered bonds reached € 1.7 trillion.

As already discussed, covered bonds are securities issued by a bank and backed by a dedicated, segregated group of loans known as a “cover pool”. The bondholders have two safeguards in their holding of covered bonds. First, the bonds are backed by the cover pool over which the bondholders have senior claims in case of bankruptcy. Second, because the covered bonds are the obligations of the issuing bank, the bondholders have recourse to the bank if the cover pool is insufficient to meet the bond obligations. In this second sense, covered bonds differ from the U.S.-style mortgage backed security, which are obligations of the special purpose vehicle - a passive company whose sole purpose is to hold assets and issue liabilities against those assets. The loans backing the covered bonds stay on the balance sheet of the bank, eliminating one step in the intermediation chain, and also guarding against potential incentive problems in the “originate to distribute” model of securitization in which the originating bank can sell the loan and take it off its balance sheet altogether.

The double protection offered by covered bonds distinguishes them both from senior unsecured debt and asset-backed securities (ABSs). In contrast to ABSs, the cover pool serves mainly as credit enhancement and not as a means to obtain exposure to the underlying assets. Furthermore, cover pools tend to be dynamic in the sense that issuers are allowed to replace assets that have either lost some quality or have been repaid early. These features imply that covered bonds are seen not so much as an instrument to obtain exposure to credit risk, but rather as a higher-yielding alternative to government securities.

These payoff attributes of covered bonds are reflected in the identity of the investors who hold them. The identity of the investors are critical in determining the funding profile  $\{z_i\}$  of the intermediation sector. The objective of achieving a higher funding profile is achieved if the investors are either household savers or non-bank institutions such as pension funds and mutual funds. A survey of the investors in covered bonds was released in May 2009 by the European Covered Bond Dealers Association (SIFMA (2009)), and is reproduced in Figure 11. We see that the bulk of the investors in covered bonds are non-banks, with the largest category being asset management firms. Leveraged institutions and intermediaries constitute only around one third of the total. Even within the intermediary sector, institutions such as private banks are closer to asset management firms in character than intermediaries such as broker dealers who lengthen the intermediation chain.

Even among covered bonds, the Danish system of mortgage bonds has attracted considerable attention recently as a resilient institutional framework for household mortgage finance due to