**Box 6**

## VULNERABILITIES IN OPEN-END REAL ESTATE MUTUAL FUNDS

In several euro area countries, a number of open-end real estate funds have experienced severe liquidity shortages in recent years, including most recently in Germany. These crises not only often resulted in the closure of individual funds, but also led to the disappearance of this type of investment in some countries. Open-end real estate funds may come under pressure when real estate prices move downwards. Some recent policy initiatives (especially in Germany) have been taken to deal with this fragility. Open-end real estate funds may be susceptible to financial fragility for two main reasons: (i) liquidity transformation, and (ii) revaluation policies.

(i) Liquidity transformation: Similar to closed-end property funds, the major part of open-end real estate funds' portfolios is invested in relatively illiquid assets (real estate). While closed-end property funds issue a fixed amount of shares that are traded in the secondary market, open-end fund shares are (with minor exceptions) not listed on organised exchanges. Instead, they can continuously issue new shares and guarantee their redemption on a daily basis. The redemption price which investors receive if they withdraw their funds is determined by the respective daily market prices of the liquid assets and the book value of the property held by the fund. Since the property in general cannot (at least not at short notice) be sold at book value, the fund therefore bears a liquidity risk. If actual withdrawals exceed the fund's liquidity, the fund could be forced to sell off property below book value in order to obtain additional liquidity, or to freeze redemption temporarily where the sale of property below book value is, in general, not permitted. An imminent threat of such a scenario, obviously, would lead to an erosion of trust in this type of investment. As a consequence, self-fulfilling liquidity crises are possible in open-end funds.[1]

(ii) Revaluation policies: The valuation policies of properties in the funds may also contribute to the fragility of these financial intermediaries. Daily market prices for property do not exist, and assessing the value of commercial real estate is frequently extraordinarily costly. Hence, funds are generally required to assess the value of each property in the fund only once a year. In a phase of declining property prices, the lagged adaptation of the redemption prices to changes in market prices can generate arbitrage opportunities for investors. After a decline in real estate prices, investors can anticipate a reduction in the redemption price. Depending on their transaction costs, investors might therefore have an incentive to withdraw their funds shortly before the devaluation in order to reinvest them after it. Obviously, the arbitrage profits absorb liquidity held by the funds. Even investors initially not willing (or able) to realise arbitrage profits would expect large withdrawals of arbitrageurs – which may force the real estate fund to sell off property below book value or, where this is not permissible, to freeze redemption temporarily, leading eventually to an erosion of trust with respect to the redemption promise. Consequently, even those investors have an incentive to withdraw, thus aggravating the liquidity crisis.

The potential susceptibility of open-end real estate funds to crises raises the question why investment companies ever choose this structure in the first place. Viewed from an investor's perspective, the guaranteed redemption of fund shares at a redemption price determined by the book value of the fund's property provides investors with liquidity insurance and may seem to offer low volatility returns. This feature of the funds may for example have contributed to the boom in open-end property funds in Germany after the severe stock price slump of 2001. Furthermore, the staggered revaluation of the funds' property permits a gradual intertemporal smoothing of shocks to property prices, thereby further reducing the volatility of investors' returns. However, as already noted, the extent to which an open-end real estate fund can provide this insurance depends on the ability of investors to take advantage of arbitrage opportunities. In particular, if institutional investors, which typically have lower transaction costs, can hold a large fraction of a fund's shares, then they could in principle undermine this insurance. Nevertheless, from a policy perspective, the liquidity transformation of open-end real estate funds might also serve as a disciplining device, because investors' ability to withdraw their funds provides them with an effective measure to "vote with their feet" against poor performance. This ability to discipline is stronger than in closed-end mutual funds, since the redemption

1 For the role of institutional investors in liquidity crises, see J. L. Peydró-Alcalde (2006), "The Impact of a Large Creditor and Its Capital Structure on the Financial Distress of Its Borrower", European Finance Association, Zurich.

price in open-end funds is essentially unaffected by significant withdrawals in the short run, whereas in closed-end funds, the stock price would only decline in the face of large sales.

Given the inherent fragility described above, it is not surprising that all crises in open-end real estate mutual funds have been preceded by a downward real estate price trend. This was the case in earlier episodes in the Netherlands, Switzerland and Australia. In Australia, property prices increased strongly after 1987 and the Australian real estate market enjoyed large inflows of capital. The real estate boom was further supported by exceptionally low interest rates on loans collateralised by real estate. When the central bank subsequently began tightening monetary policy, property prices dropped by around 60%. This, in turn, caused a run by investors in order to redeem their shares of open-end real estate funds. To prevent these investment vehicles from collapsing, the government decided to stop all redemptions for a period of 12 months and forced all funds to list themselves on the stock exchange, i.e. converting them to closed-end mutual funds.

In the Netherlands in the late 1980s, the Dutch fund Rodamco was one of the largest real estate funds in the world. It was owned by Robeco Group, at that time the largest independent European investment group managing funds. Robeco followed a policy of tacitly guaranteeing fund prices. Thus, for 11 years prior to September 1990, Robeco bought back shares of Rodamco at net asset value from any investor wishing to sell. Low interest rates in the late 1980s made an investment in Rodamco shares particularly attractive, since it offered a return of about 3% higher than a bank deposit. At this time, the fund had about three-quarters of its assets invested in the US and UK real estate markets. In 1990, however, rising interest rates caused a high outflow of capital. At the same time, the US market – and thus Rodamco's portfolio – was affected by a severe drop in real estate prices. This should have had an adverse impact on Rodamco's share price, because in an open-end structure the unit price is determined by dividing the total asset value of property and cash by the number of units. Based on the standard valuation rule in place in the Netherlands at that time, however, all fund properties were only appraised simultaneously once at the end of the fiscal year. Hence, investors could predict that the redemption price would suffer a severe decline at a future point in time – i.e., at the end of 1990. In that situation, it was individually optimal for investors to redeem their shares before and buy them back after the reappraisal. Hence, arbitrage had become possible, and indeed took place on a large scale in September 1990. Robeco reacted by suspending its traditional policy of buying back shares when asked to do so by investors. Eventually, severe liquidity problems forced the management to transform the fund into a stock-listed closed-end fund.

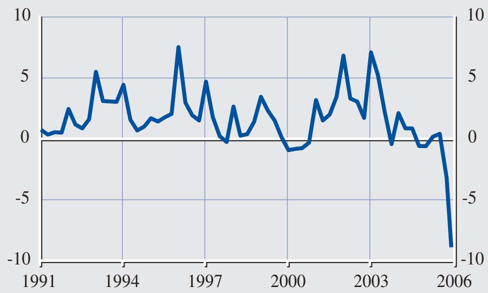
In Germany, average property prices and, in particular, commercial real estate returns declined after 2001.[2] Because several of the 31 German-based public open-end real estate funds managed by 16 investment companies purely focus on investments in Germany, this downward price trend put these funds under pressure. With a few exceptions, these investment companies are held by banks or financial conglomerates. It is possible that investors also expected that these fund owners would step in if these funds experienced liquidity shortages.

In December 2005, an open-end real estate fund announced a likely future reduction in the redemption price due to an expected downward revaluation of its real estate. The fund, as a

2 See C. Bannier, F. Fecht and M. Tyrell (2006), "Open-end Real Estate Funds in Germany – Genesis and Crisis", *Kredit und Kapital,* forthcoming.

**Chart B6.1 German real estate funds, quarterly net inflows**

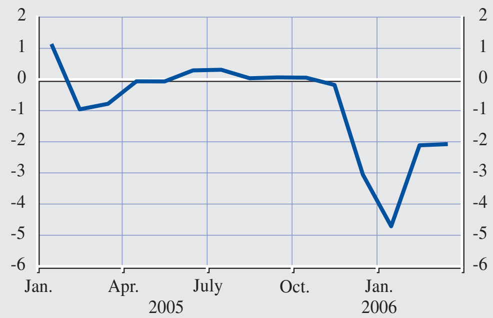
(EUR billions)




Source: BVI.

**Chart B6.2 German real estate funds, monthly net inflows**

(EUR billions)




Source: BVI.

consequence, was confronted with substantial withdrawals. As a response, redemption was temporarily frozen and the fund was closed until further notice. In the aftermath of this decision, a number of other open-end real estate funds experienced large liquidity outflows (see Charts B6.1 and B6.2). In light of the unstable market environment and the increased nervousness of investors, questionable sell recommendations for two other funds from a small rating agency triggered new turbulence in mid-January 2006. Meanwhile, all funds had been reopened again.

In response to these considerations triggered by these recent episodes, a variety of different contractual and regulatory measures have been put forward to enhance the stability of this market segment. The objective of these measures is, in general, to enhance the resilience of open-end real estate funds and to reduce contagion effects among different funds. In particular, the main objective of these measures is to increase the funds' liquidity, to improve their transparency, and to accelerate the adaptation of the redemption price to market values. Specifically, the following measures have been discussed: (i) the introduction of a notice period for large sales of units; (ii) an increase of the minimum liquidity ratio that funds must hold; (iii) the broadening of the fund share listing to improve exchange trading when redemption is suspended; (iv) the revaluation of properties at a higher frequency of properties' revaluation and strengthening of the independence of the experts assessing the property; and (v) the fostering of transparency of the fund value, of the funds' investor structure, of the level of their borrowing, and of information on the typical risks that funds face. Each of these measures should reduce open-end real estate funds' vulnerability to self-fulfilling liquidity crises. Enhanced transparency should also improve investors' ability to monitor management directly, diminishing the need for investors to exert control by withdrawing funds.

The fragility of this type of investment is inherent in its open-end structure and, therefore, the benefit of its flexibility needs to be weighed against the cost of a more stable closed-end structure in the context of real estate mutual funds.