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WHAT ARE THE CHALLENGES AND PROBLEMS FACING CHINA'S OUTWARD PORTFOLIO INVESTMENT: EVIDENCE FROM THE QUALIFIED DOMESTIC INSTITUTIONAL INVESTOR SCHEME

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What are the Challenges and Problems Facing China's Outward Portfolio Investment: Evidence from the Qualified Domestic Institutional Investor Scheme*

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Abstract

Since their inception in late 2007, the Qualified Domestic Institutional Investor (QDII) funds, which help Chinese investors to invest in foreign capital markets, have experienced significant portfolio losses and persistent fund outflows. While these losses are large in absolute terms, QDII funds, on average, performed better than Chinese A-share funds, but slightly worse than a group of foreign mutual funds. Our study focuses on the QDII industry, and asks three interrelated questions: 1) why have there been large fund outflows from the industry? 2) What explains QDII funds' poor performance? And 3) why have QDII funds been so heavily exposed to the Hong Kong market? Our empirical analysis shows that the persistent capital outflows were primarily a result of disappointing fund performance. This poor performance can, in turn, be explained by the deficiency of knowledge required of QDII fund managers to successfully invest in foreign capital markets and manage global portfolios. Finally, our study goes some way to explain the phenomenon of QDII funds' large asset allocation in the Hong Kong market. This 'Hong Kong bias' is shown to be consistent with the well-documented 'home bias' behaviour in cross-border portfolio investment, but is greatly exacerbated by the lack of global investing experience of QDII managers.

Keywords: China Economy, Capital Account Liberalisation, Outward Portfolio Investment, QDII

JEL Classification: F21, F34, O53

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1. Introduction

China has entered an important stage of its structural economic transformation and capital market reform. In recent years, substantial policy progress has been made on improving the flexibility of the exchange rate, aligning the interest rate setting mechanism with market forces, and reducing regulatory controls on the capital account (PBC, 2012). In this study, we look at one of the key developments relating to the liberalisation of China's capital account: the establishment of the Qualified Domestic Institutional Investor (QDII) program, which helps Chinese capital to be invested in foreign financial markets. In particular, we focus our study on a number of pressing issues currently facing the QDII industry, and ask three important and interrelated questions: 1) why have there been massive capital outflows from the industry? 2) What explains QDII funds' poor performance? And 3) why have QDII funds been so heavily exposed to the Hong Kong market?

Our empirical results show that the large investor withdrawals were primarily driven by the poor performance of QDII funds. While this result seems obvious and is widely discussed in the existing literature, our study is the first to provide empirical support to the relationship. In addition, we find that the magnitude of investors' withdrawals tends to be more sensitive to the absolute return of funds, rather than the relative return over benchmark or risk-adjusted return. This could be consistent with the general perception that Chinese investors tend to focus more on 'return maximisation' for portfolio investment, with insufficient consideration given to benchmark performance and portfolio risk (Shenzhen Stock Exchange, 2012).

Turning to the issue of fund performance, we show that the lack of global investing experience of fund managers and limited research capacity of QDII funds are significant in explaining poor returns. Interestingly, these factors are also important in explaining why most QDII funds have significant exposure to the Hong Kong market. It appears that the deficiency of knowledge about offshore markets has constrained fund managers in pursuing a more globally diversified portfolio, and exacerbated the 'home bias' behaviour in their asset allocation. Furthermore, QDII funds, on average, show a tendency to repatriate funds back to Hong Kong following significant portfolio losses. This is also consistent with the 'home bias' behaviour relating to capital repatriation during times of rising risk aversion. Our analysis however cannot rule out of the possibility that this 'Hong Kong bias' is also influenced by fund managers attempting to add value to the portfolio, using their previous local-market (i.e. A-share market) investing experience.

Finally, we discuss the importance of the QDII industry in a broader context of China's financial market reforms, and the role it can play in enhancing the portfolio performance of Chinese investors. We show that A-share investors could have benefited significantly by allocating part of their risky portfolio in QDII funds in the last few years, achieving both higher returns and lower portfolio volatility. Looking ahead, as restrictions on capital controls are gradually lifted, and investor awareness of global diversification improves, demand for offshore investment should increase substantially, creating a favourable backdrop for the future development of the QDII industry.

Notwithstanding the bright future, the industry is currently facing a number of hurdles both internally (e.g. lack of capable managers, small fund size, and limited resources to support research) and externally (e.g. reduced investor interest, poor market performance, and elevated uncertainty). In this regard, we believe that there are a number of things the authorities can help.

On the demand side, the authorities can help to expand the size of the QDII market by encouraging large state-owned institutions, such as pension funds and sovereign wealth funds, to invest in QDII funds for greater portfolio diversification. In addition, the authorities should continue to improve the financial literacy of the general public, particularly raising investors' awareness of risk management and the importance of international portfolio diversification. This should raise retail-investors' demand for QDII funds. On the supply side, regulators could set higher eligibility standards for QDII managers, in order to improve the overall professional quality of the industry. This improvement should lead to better fund performance and capital inflows into the industry, according to our study. Furthermore, tax incentives could be offered to stimulate the demand for and supply of QDII funds, such as lowering dividend/capital gain taxes for investors, reducing stamp duties for transactions, and cutting levies imposed on fund companies. Finally, the government should continue to push for the exchange rate reform, reducing the negative impact of persistent currency appreciation on QDII performance, and thereby increasing its investment appeal to Chinese investors.

Overall, we think that given the clear policy direction towards greater openness of capital markets, outward portfolio investment from China will likely rise substantially in the coming years (He et al. 2012). This will create a favourable regulatory backdrop for the QDII industry. But in order to capitalise on this growth, the industry needs to first address its existing problems, and make efforts to regain investor trust. Only when the proper infrastructure is put in place (quality managers, capable research teams, right institutional/regulatory frameworks, etc.), can the industry truly excel and fulfil its role in China's financial market liberalisation and economic transformation.

The rest of the paper is structured as follows. In Section 2, we provide a brief background discussion on the evolution of China's capital account liberalisation, and how the QDII scheme fits into this broad context. We present our three key research questions in Section 3 and discuss the results from our empirical analysis. Finally, we conclude and discuss policy implications in Section 4.

2. Institutional Background and Current Situation

China has made significant progress in opening up its financial markets over the past two decades. Of the three key components of financial market reforms, progress on exchange rate liberalisation has been most noticeable, with major policy initiatives including: 1) a gradual appreciation of the RMB, 2) the creation of offshore currency centres, 3) the push to make the RMB a trade settlement currency, and 4) the establishment of currency swap facilities with other central banks. On the interest rate market reform, while the People's Bank of China (PBC) remains in control over the setting of short-term lending and deposit rates and the amount of credit banks are allowed to disburse, policy

supports have been given to the development of inter-bank funding markets that have increasingly exerted influence on interest rate formation in the economy (He and Wang 2012).

Regarding capital account liberalisation, China has taken a cautious and gradualist approach, although significant progress has been made over time (Shu et al. 2008). Within the capital account, a selective opening for direct investment has been underway since the early 1990s, under strict regulatory screening and approval. The extent of control has been gradually lifted over the years, allowing inward foreign direct investment (FDI) to increase substantially over the past two decades (IMF, 2012). Relative to inbound investment (whose stock exceeded USD$1,400 billion in 2010), the growth for outward FDI (or ODI) has been relatively slow. Recognizing the unbalanced nature of the development, Chinese authorities have, in recent years, increased policy support to companies seeking global investment opportunities, and as a result, the stock of ODI has grown rapidly and reached USD$400 billion at the end of 2011 (Ministry of Commerce 2011).

Relative to direct investment, the pace of liberalization in the other component of the capital account, the financial account, has lagged behind. Part of this reflects policy makers' concerns about speculative portfolio flows, which can be volatile and difficult to manage (Cheung et al. 2006). These concerns were reinforced by events, such as the Asian Financial Crisis, where massive capital outflows from a number of South-East Asian countries had exacerbated the effect of the crisis on the financial systems and economies around the region.

Notwithstanding the caution, important steps have been taken to allow for a selective and managed opening of the financial account in recent years. The main policy initiative was the launch of two pilot schemes: Qualified Foreign Institutional Investor (QFII) in 2002 and Qualified Domestic Institutional Investor (QDII) in 2006. The QFII program allows licensed foreign investors to buy and sell yuan-denominated financial assets in China. While the industry grew rapidly in the early years, the Global Financial Crisis (GFC) and disappointing A-share market performance in recent years has taken its toll on foreign investor interest in QFII products. In 2011, there were around 100 licensed QFII investors in China, with a combined quota of USD$21.6 billion (State Administration of Foreign Exchange, 2012).

Forming a mirror image with QFII, the QDII program allows licensed domestic institutions to raise capital from Chinese investors to invest in foreign capital markets. The QDII scheme can trace its origin back to the middle of the last decade, starting with Chinese insurance companies seeking offshore investments for their foreign currency premiums. In 2006, the authorities formerly launched the QDII program, expanding the investor base to include banks and mutual funds, and broadening the investment scope to include a wider range of fixed income products. However, the industry did not really take off until late 2007, when restrictions were lifted to allow 1) QDII funds to invest in foreign stock markets, and 2) retail investors to participate in the QDII scheme.

Chinese investors embraced QDII with enthusiasm, and financial institutions – banks, insurance companies and mutual funds – moved quickly to tap into new-found investor demand. According to data compiled by WIND, the first four QDII funds established in the second half of 2007 raised a total of RMB119.4 billion, with significant over-subscription.[1] However, this explosive growth fails to repeat itself in subsequent years, as the QDII funds suffered significant losses during the GFC and investor demand for offshore investment plummeted. Although new funds have continued to emerge after the subprime crisis in 2008, the average fund size has dropped substantially and remains low.

Indeed, some QDII funds that started prior to the GFC did not survive the subsequent losses. According to WIND, funds that were established before 2009 account for less than 1/5 of the QDII industry today (Chart 2). But in terms of assets-under-management, the older funds remain much larger than those launched post-GFC.

In terms of asset allocation, today's QDII funds invest in diverse locations and asset classes. Over 50% of the industry is made up of equity funds, investing primarily in publicly listed companies across the globe. About one quarter of the funds focus on commodity investment, with the rest specialising in other investments, such as real estate and fixed income products (Chart 3). There are a number of fund of funds, which focus their investment on foreign mutual funds and ETFs, although much of their investment eventually ends up in equity markets. Geographically, around two thirds of the industry has a global mandate, while a majority of the remaining funds invest in emerging markets, such as BRIC countries and the Asia Pacific region (Chart 4).

3. Empirical Analysis

3.1 What Explains the Massive Outflows from QDII Funds?

Since the industry started to open up to retail investors in 2007, there have been significant and persistent outflows of funds from the QDII industry. In fact, of the 50 funds we track in our sample, only three experienced net inflows over the investment period, while the remainder experienced outflows of between 3% and 48% of their initial size. Chart 5 shows the change in size of the nine oldest QDII funds since their inception.[2] As shown, more than 1/3 of the funds have been withdrawn in the past four years, with outflows occurring in a persistent and sometimes aggressive manner.

[1] In China, QDII licensed institutions can be broken down into three main categories: fund management companies, banks and insurance companies. The insurance companies tend to use their QDII quotas (obtained from the SAFE) for their own investment of insurance premiums, and do not open to other investors. Banks mainly use the quotas to support their wealth management products, and tend to focus on fixed income investment. Our study focuses on QDII mutual funds, which are the most diverse and least restrictive (in terms of asset selection) of the three groups. The QDII fund industry is also the largest of the three, commanding a combined quota of RMB 440 billion as of Q3 2012, more than those of banks and insurance companies put together (RMB 330 billion).

[2] We measure net flows using units of funds, rather than nominal yuan, as this captures the 'real' change in the fund size that is not influenced by performance.

What caused investors to withdraw their investment so aggressively? Disappointing fund performance appears to be an obvious answer (Ba 2007 and Cao 2010). Indeed, the return generated by QDII funds has been abysmal in recent years, with only 6 out of the 50 funds in our sample reporting positive holding period returns. Obviously, a large part of this poor performance was due to the bleak global environment, as the starting time of the industry coincided with the peak of global equity markets. Shortly after the first batch of QDII funds was launched, global markets collapsed in light of the US subprime crisis, which later degenerated into a full-blown financial crisis of global proportions. On average, QDII funds that started in late 2007 lost over 50% of their value during 2008, and despite the subsequent market recovery, remain about 26% under water as at the end of Q2 this year (Chart 6).

Indeed, the terrible market backdrop means that QDII funds were not alone in suffering massive portfolio losses and large capital outflows. Table 1 compares QDII funds' performance and net flows against those of A-share funds in China and large foreign mutual funds. All three groups of funds experienced substantial negative returns between Q4 2007 and Q2 2012, with QDII funds ranking ahead of A-share funds, but trailing behind offshore funds. Similarly, all three groups of funds have experienced significant capital outflows of around 30% over the holding period. These simple comparisons suggest that the sharp losses of QDII funds are not unique, and their experiences were similar to those of their local and overseas counterparts'.[3]

Besides the declining equity markets, QDII performance was also negatively affected by the persistent appreciation of the RMB. Since QDII funds raise yuan-denominated capital for foreign investment, and are required to convert their portfolio back to the RMB for reporting and redemption, the gradual appreciation in the CNY/USD (and CNY/HKD) exchange rate has reduced QDII's foreign investment returns. In developed markets, this currency risk can be completely or partially hedged, depending on the degree of discretion of fund managers. However in China, the relatively underdeveloped currency market and strict capital controls mean that QDII managers have limited scope to hedge this risk. Even if they could hedge (using currency forwards in recent time, for example), the relatively high costs of such transactions would also subtract from funds' total returns.

Unfortunately, we do not have information about whether and how much each QDII fund hedges against currency risk, and therefore, we calculate fund performance before and after exchange rate adjustment. Upon examining the data, there is little difference between the two measures, as the impact of currency appreciation on total returns is small relative to investment-driven returns. Therefore, in the regression analysis below, we use mainly the unadjusted return (as it gives a clearer measure of performance), and use the currency-adjusted return where appropriate for robust checks.

[3] The numbers in Table 1 are designed to put QDII fund performance in a broad context. The underlying message is that the Global Financial Crisis has affected all mutual funds that invest in risk-sensitive asset classes (such as equity) given the synchronized decline in global markets. However, directly comparing QDII fund performance with that of A-share funds is not strictly appropriate, as these two funds belong to different asset classes, according to modern financial theories, such as the Capital Asset Pricing Model (CAPM).

To see whether there is a relationship between fund performance and the size of capital outflows, Chart 7 plots two variables for the 50 QDII funds in our sample. As expected, there is indeed a positive relationship between the two, suggesting that better performing funds have tended to see *lower outflows (or inflows)* than those that have performed poorly. We will test this relationship more formally below.

Besides the simple holding period (or absolute) return used in the above chart, we calculate three other performance measures: excess return over QDII fund benchmark, risk-adjusted return, and excess return over the Shanghai/Shenzhen 300 index (CSI 300). These measures can be seen as measuring QDII fund performance against various control groups. The excess return against benchmark is a standard performance measure in the fund management industry, aimed at separating managers' performance from that of the broad market. The risk-adjusted return goes a step further, taking into account the degree of risk that fund managers take in order to generate the excess return. Finally, we measure QDII fund performance relative to the CSI 300 index, which is a standard performance benchmark for Chinese A-share funds. The rationale for creating such a measure is to reflect the choice facing an average Chinese investor between investing in the local market and in the foreign market. If the A-share market performs better than offshore markets, investors will have an incentive to shift money away from QDII funds to the local market, and vice versa. We think this is an important measure to consider, as most Chinese investors view QDII funds as a simple alternative to A-share equity funds (Gu 2008).[4]

To properly test the empirical relationship, we run a number of bivariate regressions of QDII fund net capital flows on various measures of performance.[5,6] The results are shown in Equations 1 to 4 in Table 2. As expected, all four measures of fund performance are shown to have a positive and significant relationship with net flows. Of the four measures, the simple holding period return has the largest and most significant correlation with net flows, as reflected in the size and the statistical significance of its coefficient. This is consistent with the general perception of Chinese investors that they tend to evaluate the success of their investment based on absolute returns (i.e. whether they have made money), without giving adequate consideration to benchmark performance or portfolio risk (Shenzhen Stock Exchange, 2012).[7]

[4] As a cross check, we substitute the CSI 300 index with the performance index of A-share equity mutual funds. The empirical results, not shown in the paper, remain the same.

[5] The QDII fund data used in this study are taken from WIND, while benchmark and market-related data are from Bloomberg. Apart from daily net value of funds, QDII data are in quarterly frequency, extracted from their quarterly reports by WIND. There are in total 59 QDII funds in China as of September 2012, nine of which are new funds that have no records of fund flow information, we therefore exclude them from our sample.

[6] While the relatively small size of the sample may not give us very precise estimates of the coefficients, it, in fact, raises the hurdle for rejecting the hull hypothesis of the statistical t-tests. In other words, the statistical significance of the coefficients will likely improve as the sample size gets larger, all else equal.

[7] This is particularly true for less financially-literal retail investors, who dominate the QDII industry (see below for details). It is also worth noting that the interpretation of investors' tendency to focus on returns, and not paying as much attention to risk, is solely based on the results derived in Table 2. A more proper examination of how investors evaluate QDII fund performance in their portfolio requires an explicit modelling of variance-co-variance matrix between QDII and other assets in their portfolio. This is not the focus of our study, and thus, beyond the scope of our analysis.

In Equation 5 and 6, we expand our regressions by introducing a number of control variables. The full equation can be written as the following:

$$outflow_i = \beta_0 + \beta_1 performance_i + \beta_2 equity\_d_i + \beta_3 size_i + \beta_4 ownership_i + u_i \quad (1)$$

where:

$outflow_i$ is the percentage net flow of funds

$performance_i$ is the holding period return.[8]

$equity\_d_i$ is a dummy variable for equity-oriented QDII funds.

$size_i$ denotes the size of the fund.

$ownership_i$ is the percentage ownership of a fund by retail investors.

u_i is the idiosyncratic term.

These control variables are designed to capture the influence on net flows from sources other than fund performance. The 'equity dummy' assesses whether net flows vary across funds that invest in different sectors. Its coefficient, as shown in Equation 5 and 6, takes on a positive value, suggesting that equity funds on average see less outflows than other funds, although the coefficient is not statistically significant.

The 'size' of the fund is used as a proxy for the reputation of the fund management company. We expect it to be positively correlated with net flows, as larger and more reputable funds ought to see fewer outflows than smaller and less well-known funds, holding performance constant. Indeed, the results are consistent with our prior, and the coefficient is statistically significant in Equation 6.

The last control variable is 'ownership', which measures the percentage of the fund owned by retail investors. Retail investor ownership of QDII funds is very high, averaging around 85% for the whole industry (the remaining 15% is held by institutional investors and fund managers themselves). The rationale for including this variable is to capture the more speculative nature of Chinese retail investors, who tend to have a shorter investment horizon, and are less tolerant of large market downturns than institutional investors (Shenzhen Stock Exchange 2012). Thus, we expect the 'ownership' variable to have a negative sign, indicating that funds with a large retail-investor base should experience greater outflows owing to the market turbulence of recent years. The negative coefficient in Equation 6 is consistent with this hypothesis. Overall, our results from Equation 5 and 6 suggest that even after controlling for fund specific characteristics, the influence of performance on net flows remains positive and significant.

[8] We use the absolute return in the full model to reflect the results from the bilateral regressions. As a robust check, we replace the absolute return with other performance measures, and the coefficients remain statistically significant.

It is worth noting that while the above cross-sectional analysis allows us to assess the sign of the relationship between net flows and performance, it does not necessarily reveal causality. In other words, we do not know whether the poor performance of funds causes capital outflows, or the outflows themselves lead to worse performance. Although this question cannot be fully addressed by the regressions, we think some economic reasoning can help to shed light on the issue. It seems reasonable to expect a causal relationship to run from performance to fund flows (i.e. better performing funds attract capital inflows, and vice versa), as this is consistent with the rational behaviour of investors. However, explaining the reverse causality – from net flows to performance – is much less straightforward. It is true that funds that experience larger investor withdrawals would need to hold a higher amount of cash to meet redemptions. This might lead to underperformance of the funds in a persistent bull market, because their portfolio is not as fully invested. The reverse will also be true that, in a persistent bear market, larger cash holdings could reduce the extent of losses from the risky portfolio, allowing the funds to outperform their peers. However, this cash holding-induced under/out performance is likely to be fairly small, provided the variation in net flows across funds is not large. Perhaps more importantly, the investment environment over our sample period *as a whole* was neither a persistent bull market, nor a bear market (e.g. there were bull and bear phases over time), suggesting some ambiguity as to whether holding more cash would lead to superior or inferior performance. Because of these, we think the negative relationship found between performance and net flows is more likely driven by the former leading the latter.

3.2 What Explains Funds' Performance?

Since fund performance plays an important role in determining the extent of capital outflows, the next question to ask is what explains performance? To examine this question, we run a series of regressions to see what characteristics of QDII funds are correlated with their returns.

For the explanatory variables, we first construct a 'manager quality index', which consists of three components: 1) the number of managers in a fund, 2) whether the managers have foreign financial market working experience, and 3) whether the managers have tertiary (or above) education in foreign universities. The first component should have an obvious and positive relationship with returns, as funds with a large investment team are more likely to outperform those with fewer managers, all else equal.[9] The second and the third components are designed to capture the relevance of managers' past work/study experience in investing foreign capital markets. Our expectation is that, since QDII funds are mandated to invest overseas, the funds with managers who have foreign experience should outperform those who do not.[10,11] We construct two dummy variables based on the

[9] Because many QDII funds in our sample have experienced turnover of managers, we account for the time overlap by using fractional numbers. For example, if a fund has two managers for half of the investment period, and one manager for the other half, we assign a score of 1.5 for the fund.

[10] The issue of limited foreign investing experience of QDII fund managers leading to poor performance is well recognized and documented in the existing literature (see Yang 2012, Gong 2010, Zhong 2009, and Gu 2008). However, none of the existing research has provided empirical evidence of the relationship.

[11] Gu 2008 highlighted a number of deficiencies of local-trained fund managers in managing global portfolios. These include 1) insufficient risk management skills, particularly around the time of the GFC, 2) a lack of knowledge in using

managerial information provided by WIND, taking a value of 1 for managers with foreign experience and 0 otherwise. The overall 'manager quality' index is the sum of the 3 components.

The second explanatory variable is the percentage of manager ownership in a fund. We expect this variable to be positively correlated with returns, as greater manager ownership reduces the principal-agency problem by better aligning the interest between investors (i.e. principal) and managers (i.e. agent) (Evan 2008 and Eichberger 1999).

The third variable is fund size, but the sign of it is ambiguous. On the one hand, large funds should have more resources to support better research, and can hire more capable managers. They should also be more cost effective, as fixed trading/operation costs can be spread over a large number of fund units (Indro 1999). On the other hand, large funds tend to be more difficult to manoeuvre, when it comes to altering portfolio allocations in a fast changing market. Indeed, the difficulty to sell illiquid securities during periods of market turmoil could significantly undermine a fund's performance. By contrast, smaller funds may be able to reposition their portfolios more easily in a turbulent market and hence improve their performance (Chen et al 2004). Finally, we include two dummy variables to account for the differences in geographical and investment sector allocations.[12] The empirical models can be written as follows:

$$performance_i = \alpha_0 + \alpha_1 quality_i + \alpha_2 ownership_i + \alpha_3 size_i + \alpha_4 global_i + \alpha_5 equity\_d_i + \varepsilon_i \quad (2)$$

Where:

$performance_i$ is measured as absolute returns, excess returns relative to benchmark and risk adjusted returns,

$quality_i$ is the manager quality index,

$ownership_i$ is the percentage of manager ownership of a fund

$size_i$ is the size of a fund,

$equity\_d_i$ is a dummy variable for equity funds,

$global_i$ is a dummy variable for funds that have a global investment focus,

and ε_i is the idiosyncratic term.

derivative products to manage risk and enhance returns, 3) a 'typical' style of trading on 'inside' information in the A-share market is not useful in mature markets, and 4) excessive speculation, such as betting on high P/E conceptual stocks and corporate restructuring, which is highly profitable in A-share markets, is less effective in developed markets, where the focus tends to be on long-term value investing.

[12] A globally focused fund will take a value of 1 in the global dummy, and 0 if it is a regional-focus fund, which include emerging market funds and BRIC funds.

The results, shown in Table 3, generally conform to our expectations.[13] The manager quality index is significantly positive across all three measures of performance.[14] The coefficient in Equation 1 suggests that for every one unit increase in the index, the performance improves by 9% over the holding period. The manager ownership is also correctly signed, although the coefficient is not statistically significant in the first three equations. Interestingly, the size variable is negatively correlated with returns, suggesting that smaller funds, that can more readily change their asset allocation, tend to outperform larger funds over the sample period. However, this variable is insignificant for excess and risk-adjusted returns, perhaps reflecting the ambiguity discussed above.

The global dummy is positively correlated with the absolute return, but the sign turns negative (albeit insignificant) for the excess return. This could be due to the fact that globally-diversified funds tend to have a larger exposure to mature markets (e.g. US, UK, Australia, etc.), which performed strongly following the subprime crisis in 2008. In contrast, many EM equity markets performed poorly in 2010 and 2011 (recall that China's A share market was the second worst performing market in 2011 after Greece, and continued to trail other markets in 2012. This would have affected stocks of Chinese companies listed overseas, which are the preferred investment for many regional-focused QDII funds). The better performing mature markets would have helped the global-focused funds to outperform regional funds in terms of absolute returns. However, it is much more difficult for QDII funds to beat their global benchmark, as they are up against fund managers all over the world that track the same indices, such as the MSCI World Index. Managing a global fund requires extensive knowledge about foreign markets, and skills to trade a wide range of securities. This puts Chinese funds in a disadvantageous position relative to their western counterparts (Ba 2010). Finally, the equity dummies are positive in all three equations, although the coefficients are insignificant.[15]

Finally, in our investigation of the determinants of performance, we include a variable representing QDII funds' average asset allocation in the Hong Kong market. The motivation is that QDII funds, especially those specialising in equity investment, tend to significantly overweight the Hong Kong market in their portfolio. As shown in Chart 8,[16] the industry's average allocation to Hong Kong is around 50%, with some equity funds almost exclusively investing in this market. Given such a high concentration, we are interested to see whether this 'Hong Kong bias' has any systematic impact on fund performance, and if so, in what direction.

[13] As mentioned before, the small sample size could have reduced the statistical significance of the coefficients, although the signs of the coefficients are less affected. We therefore focus on the signs, and see if they are consistent with our hypothesis.

[14] The results generally stay the same, if we replace the performance variable with currency-adjusted returns.

[15] We also tried a dummy variable to capture whether a QDII fund has an overseas investment consultant. However, the variable is insignificant and has a negative sign, contrary to our expectation. Ba (2010) and Ye (2011) discuss this issue and document the disappointing performance of funds with foreign consultants. Ye (2011) notes that some QDII funds actually saw their performance improved after they separated from their partners.

[16] See the appendix for the names of the funds represented by the alphabetical letters.

Chart 9 shows a simple plot of fund performance and the proportion of the fund invested in the Hong Kong market.[17] A casual observation suggests that there is a negative relationship between the two.[18] We put this relationship to a more rigorous test by adding a variable representing the Hong Kong allocation to the performance equation. The result, shown in the final column of Table 3, confirms that the Hong Kong exposure is indeed negatively correlated with returns, suggesting that funds with a larger exposure to Hong Kong tend to underperform those with a smaller position. We will discuss this issue further in the following section.

3.3 What Explains QDII Funds' Allocation to Hong Kong?

The extraordinarily high concentration of QDII funds in the Hong Kong market is an interesting and puzzling phenomenon, particularly given the negative relationship between fund performance and the proportion of the asset invested in this market.[19] Furthermore, since many QDII funds measure their performance against a global or regional benchmark, of which the Hong Kong market generally accounts for a very small weight, the large exposure to Hong Kong therefore represents a significant departure from the benchmark composition. In this section, we aim to explore what factors have contributed to this 'Hong Kong bias'?

One explanation for this 'Hong Kong bias' relates to the deficiency of the knowledge required of QDII fund managers to successfully invest in foreign capital markets and manage global portfolios. Industry contacts suggest that it is difficult for QDII funds to attract experienced and qualified fund managers from overseas, because a lack of resources constrains compensation.[20] This has forced many funds to employ local-trained managers (i.e. those who have previously worked in A-share funds) to specialise investment in Hong Kong listed Mainland companies (Liang 2004).

Theoretically, the phenomenon of investors favouring their home markets for portfolio investment is well documented by the 'home bias' theory (Chan and Chan 2005, Tesar 1995, and Lütje 2007). Empirical studies have shown that this 'home bias' can be driven by a number of behavioural traits, such as investors' perceived information advantage about the home market and a better understanding of the local rule of law leading to overconfidence and a reluctance to diversify. Since

[17] We use the absolute return here, since it is found to be the most significant performance measure on which investors' withdrawal/injection decisions are based. If the excess return relative to the benchmark is used instead, one needs to adjust for the funds' over/under exposure to Hong Kong relative to the benchmark weights.

[18] QDII funds that do not invest in the Hong Kong market are excluded from the plot. Most of the omitted funds are non-equity funds.

[19] For example, Cheung et al. (2006) predicts that Hong Kong will capture around 10% of outward portfolio investment from China. In fact, even under their most optimistic scenario, Hong Kong would only capture around 20% of the total investment, which is much lower than the proportion of QDII funds invested in Hong Kong currently.

[20] We have talked to some QDII fund managers and informed market participants, who follow the industry closely.

QDII funds are prohibited from investing in A-shares, the Hong Kong market is naturally seen by many managers as the closest proxy for their 'home market'.[21]

To properly test if managers' lack of foreign investing experience has any impact on their decision to overweight Hong Kong, we use one of the components from our 'manager quality index', which directly measures a manager's previous work experience, in the regressions.[22] We expect it to be negatively correlated with Hong Kong allocation, as foreign-trained managers would not face the same knowledge constraint about global markets as those with only local experience.

As for the control variables, we use the fund 'size' to account for the level of resources possessed by QDII funds. Not only is a large fund more capable of hiring more experienced managers, it also has more resources to build a good research team to support foreign investment. On the flipside, if a fund is small, with limited research capacity to cover wider markets, the manager is more likely to invest in his more familiar 'home' market (Gong 2010). As a result, we expect a negative relationship between fund size and the Hong Kong allocation.

We also include fund performance in the equation for completeness, as we already know it is negatively correlated with the Hong Kong allocation from previous results. But as with cross-section regressions, we do not know about the nature of the causal relationship, that is, does more allocation in Hong Kong cause poorer fund performance, or do poor returns lead the funds to be in favour of the Hong Kong market. We will address this question by running a set of Granger causality tests between performance and the Hong Kong allocation. Finally, we include an equity dummy to separate equity oriented funds from others. The above discussion can be written into an equation below:

$$HK\_average_i = \gamma_0 + \gamma_1 Experience_i + \gamma_2 size_i + \gamma_3 performance_i + \gamma_4 equity\_d_i + \upsilon_i \quad (3)$$

Where:

$Experience$ is a dummy variable that represents whether fund managers have overseas investment experience.

$HK\_average_i$, $size_i$, $performance_i$ and $equity\_d_i$ are defined in the same as Equation (2).

υ_i is the idiosyncratic term.

[21] A number of QDII funds employ Hong Kong based fund managers, in which case the Hong Kong market is their 'home market'.

[22] Note that a manager's working experience in Hong Kong and Taiwan is not qualified as overseas experience in our construction. Also, we do our best, based on the available information, to distinguish those that truly worked overseas from those that worked for a foreign institution in China.

The results are presented in Table 4. The manager experience dummy – the variable in which we are interested the most – is significantly negative across all equation specifications. The coefficient in Equation 1 suggests that funds, managed by foreign-trained managers, have on average 22.4% less weight on Hong Kong than those managed by local managers. In addition, fund 'size' and 'performance' are also negatively correlated with the Hong Kong allocation, consistent with our expectations.

To address the causal relationship between performance and asset allocation, we put together a small sample QDII funds, with large exposure to the Hong Kong market and a long data record. We run two Granger causality tests: one is constructed as return leading allocation (Equation 4), and the other as allocation leading return (Equation 5).

$$HK\_average_t = \delta_0 + \delta_1 Performance_{t-1} + \upsilon_t \quad (4)$$

$$Performance_t = \kappa_0 + \kappa_1 HK\_average_{t-1} + \upsilon_t \quad (5)$$

Where:

Performance: is the average quarterly return of the funds
HK_average: is the average quarterly allocation to the Hong Kong market
υ_t is the idiosyncratic term.

As shown in Table 5, the lagged return carries a significantly negative sign for the Hong Kong allocation, while the reverse relationship is wrongly signed and insignificant. These results suggest that it is fund performance that drives the investment in the Hong Kong market. While this finding may not seem intuitive at a first glance, we think it is again consistent with the 'home bias' behaviour in cross-border portfolio investment. Studies in the literature have shown that not only do investors tend to overweight their 'home' market, they also have the tendency to repatriate funds back to the local market amid rising risk aversion (Chan and Chan 2005, Lütje 2007). By examining the data closely, we found that the allocation to the Hong Kong market indeed tends to increase significantly following large portfolio losses during periods of global sell-offs.

Overall, our results suggest that the choice to overweight Hong Kong is related to a lack of human expertise about foreign investment exacerbating the 'home bias' behaviour of QDII fund managers. And poorly performing funds have tended to revert back to the 'home market' after experiencing large portfolio losses.

The above results and discussions give the perception that QDII funds have been *forced* to invest in Hong Kong by constraints on human resources and disappointing performance. There is, however, another possible explanation, and that is, the managers have willingly and intentionally chosen Hong

Kong because: 1) they might have expected Hong Kong to outperform other markets, so the overweight was simply a tactical choice to enhance return; 2) managers with previous A-share investing experience can easily switch their expertise to investing in Hong Kong-listed Mainland companies; and 3), some large QDII fund management companies have presence in Hong Kong with research capacity, so funds with large Hong Kong investment can readily tap into these existing resources. Unfortunately, we cannot measure fund managers' ex-ante market expectations, and it is also difficult to know to what extent a manager's asset allocation decision was influenced by the Hong Kong market presence of his parent company. Having said that, one thing we do observe from the data is that QDII funds often increase their Hong Kong weight in times of *underperformance* of the Hang Seng and China H-share indexes relative to other regional and global benchmarks (the most obvious episode is between Q2-2011 and Q2-2012, see Chart 11). If overweighting Hong Kong was truly a tactical choice to enhance return, one would expect such persistent underperformance to lead to a reduction in the Hong Kong weight, rather than an increase.

The finding that QDII managers with only local market investing experience tend to overweight Hong Kong does not eradicate the possibility that fund managers' are attempting to add value by investing in markets that they are most familiar with. Some QDII funds, in fact, explicitly state that their investment strategy is to explore undervalued Chinese stocks listed overseas. And because the Hong Kong market houses a majority of foreign-listed Mainland companies, overweighting the market can be justified by their investment mandate.

As sensible as that seems at a micro level, such a high concentration in the Hong Kong market undermines the key policy objective of the QDII scheme in helping Chinese investors to diversify their portfolio risk and reduce investment bias towards the home market. Given the high correlation between the Hong Kong and Mainland stock markets, the 'Hong Kong bias' tends to reduce the diversification benefit of QDII funds, even though the choice may be entirely justifiable given the current skill set of QDII fund managers.

4. Concluding Remarks and Policy-Related Discussions

The QDII fund industry has suffered significant losses since its inception in late 2007. This poor performance has, in turn, led to substantial outflows of funds from the industry and markedly reduced investor interest. Our research adds to the existing QDII literature by providing empirical evidence for the negative relationship between fund performance and the size of capital outflows. In addition, we find that the performance of QDII funds is strongly correlated with an index of manager quality, which measures the level of human resources and the relevance of managers' past work/study experience in investing foreign capital markets. We find two other factors also influence returns: 1) the size of fund, which we think is correlated with a fund's research and analytical capacity, and 2) the level of managerial ownership in the fund, which can influence the degree of principal-agency problems.

Our research also provides an explanation for the significant exposure of QDII funds to the Hong Kong market. We argue that QDII funds, on average, are forced to stay in Hong Kong, because the lack of foreign market experience of fund managers exacerbates the 'home bias' tendency in their portfolio allocation. While this 'Hong Kong bias' could also be a strategy to enhance return, we find some contradicting evidence to the argument, as exposures to Hong Kong tend to increase during periods of local market underperformance.

Overall, our study uncovers some important issues facing the QDII industry today, and provides empirical evidence on the root causes of these issues. As mentioned earlier, the establishment of the QDII scheme is an integral part of China's financial market reform and economic restructuring. As China becomes more integrated into the world economy, the QDII industry should play an important role in this transition by channelling Chinese capital to global financial markets. However, the current problems in the QDII industry are restraining its growth and limiting its diversification benefits for Chinese investors. Below, we describe these benefits in detail, and discuss how the Chinese authorities can help the industry to overcome the existing challenges:

1) Despite the fact that QDII funds, on average, are 30% below their initial value, they easily beat the average performance of A-share funds since late 2007 (Table 1). In addition, QDII returns were less volatile than those of A-share funds, with the correlation of returns also quite low. These suggest that a typical Chinese investor could gain significantly by allocating part of his/her equity portfolio to a QDII fund, achieving both enhanced return and reduced risk.[23]

2) More specifically, the QDII industry can play an important role in helping Chinese investors to diversify portfolio risk and reduce the extent of 'home bias' in their investment (Gong 2010). This is indeed one of the key motivations for establishing the QDII scheme in the first place. At the moment though, Chinese investors tend to focus more on maximising returns for their investment, with insufficient consideration given to diversification and risk management. [24] However, as household wealth rises and investors' financial literacy improves, managing portfolio risk will likely become a more important consideration. This should increase investors' demand for QDII funds.

3) The QDII industry is currently facing a vicious cycle of poor performance leading to capital outflows, which reduce funds' ability to hire good managers and further undermines performance. Our results suggest that this cycle has led to a high concentration of funds in the Hong Kong market, which reduces QDII funds' diversification benefit for Chinese investors.

[23] We constructed a hypothetical two-asset optimal equity portfolio for a Chinese investor, consisting of domestic equity (CSI 300 Index) and foreign equity (MSCI Developed World Index), based on historical data going back to 1991. Using the 10-year Chinese government bond yield as the rate-free rate, the portfolio assigns 43% weight to domestic equity and 57% to foreign equity respectively. In reality, one would expect the domestic market weight to be much higher, given investors' home-bias tendency and market frictions (such as capital controls) that limit foreign investment.

[24] Our results from Table 2 showing that QDII investors tend to base their withdrawal/injection decisions on absolute returns, as opposed to risk-adjusted returns, are consistent with this observation.

To break this vicious cycle, there are a number of things the authorities and QDII regulators can help. First, tax incentives could be provided to investors to stimulate demand for QDII funds, while levies charged on QDII fund companies could be lowered. Second, the government can encourage state-owned institutions, such as pension funds, local governments, state-owned insurance companies and banks, to invest in QDII funds to gain international exposure and to diversify risk. This would increase the size of the QDII industry, thereby giving it the resources to attract more qualified managers from overseas. Third, the authorities should continue to improve the financial literacy of the public, particularly raising investors' awareness of risk management and the importance of global portfolio diversification. This will go some way to accentuate the core benefits of QDII funds in helping investors to build a more complete and balanced portfolio. Fourth, given the importance of global experience of fund managers in determining performance, regulators may set higher eligibility standards for managers of QDII funds. By raising the overall professional quality of the industry, this could improve fund performance and investors' interest. In addition, the government could help to attract qualified fund managers from overseas through policy incentives, or encourage local fund companies to train their own managers. Fifth, regulators could lift the restrictions on QDII funds' investment operation, expanding their investment scope and instruments. Some industry contacts suggest that if QDII funds are allowed to operate like feeder funds, coming under the operation of large and reputable global fund companies, Chinese investors would have fewer concerns about manager quality, and can enjoy greater economies of scale. Finally, industry contacts indicate that a large portion of fees charged by QDII funds (particularly front/back loads) are paid to commercial banks for using them as issuing platforms. If there are policies that enable QDII funds to retain more of these fees for internal use (i.e. to attract better managers and improve investment research), fund performance could be improved.

4) Turning to China's macroeconomic policies, measures that allow for more Chinese capital to be invested abroad are an important part of capital account liberalisation. The QDII industry can play a significant role in this process (Hu 2005). In addition, the outflows of the RMB could serve as a counter-balance to the QFII-related capital inflows, improving the two-way liquidity in the RMB currency market (Ba 2010). In the past few years, a gradual but persistent appreciation of the RMB has affected the foreign investment performance of QDII funds (You 2007 and Yang 2012). Going forward, as the currency moves towards its equilibrium value, the negative impact from a one-sided appreciation should diminish, increasing QDII's appeal to local investors.

5) Finally, Chinese policy makers have shown a strong commitment to financial market reform, setting up explicit goals and implementation steps in the 12th Five-Year Plan. Regarding cross-border capital investment, the authorities are likely to continue to reply on the QDII and QFII schemes to push for further convertibility and liberalisation of the capital account. Given this, we are likely to see substantial growth in portfolio-related flows into and out of China in future years. He et al. (2012) predicts that outward portfolio investment from China will grow from USD 257 billion (or 4% of GDP) in 2010 to about USD 5,500 billion (or 29% of GDP) in 2020, assuming the capital account is fully liberalised – a timeline that is consistent with the recent proposals by the

PBC. These underlying structural changes should provide strong growth impetus for the QDII industry.

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Table 1. Performance and Net Flows of QDII, A-Share and Offshore Funds

	Q4 2007 ~ Q2 2012	
Funds	**Performance^**	**Net capital flows**
QDII funds	*-29%*	*-26.3%*
A-share funds	-35%	-27.8%
Offshore funds*	-20%	-33.0%

* Offshore funds include global equity funds from Allianz, AXA, Fidelity and Vanguard.
^ Average holding period return, unweighted.

Table 2. Cross-Section Regression Results (Dependent: % Net Flow)

	Absolute (1)	Benchmark (2)	Risk-adjusted (3)	CSI 300 (4)	Absolute (5)	Absolute (6)
Constant	-0.24***	-0.26***	-0.26***	-0.28***	-0.26***	-0.27**
	(-13.18)	(-16.9)	(-15.7)	(-17.3)	(-9.9)	(-2.08)
Return (abs)	**0.29*** **				**0.35*** **	**0.32*** **
	(3.36)				**(3.7)**	**(3.34)**
Return (bench)		**0.24*** **				
		(2.4)				
Return (IR)			**0.03***			
			(1.77)			
Return (SZ300)				**0.29** **		
				(2.33)		
Equity dummy					0.025	0.02
					(0.86)	(0.59)
Size					0.001	**0.001***
					(1.47)	**(1.66)**
Retail ownership						**-0.001***
						(-1.67)
R-square	0.2	0.12	0.07	0.11	0.26	0.31
Observations	50	50	50	50	50	50

* statistical significance at a 10% level
** statistical significance at a 5% level
*** statistical significance at a 1% level

Table 3. Cross-Section Regression Results (Dependent: Return)

	Absolute	Benchmark	IR	*With HK*
Constant	**-0.23*** **	**-0.13*** **	**-0.71*** **	**-0.26*** **
	(-4.24)	**(-2.4)**	**(-2.53)**	**(-4.45)**
manager quality	**0.09***	**0.09** **	**0.51** **	**0.09** **
	(1.91)	**(2.04)**	**(2.08)**	**(1.98)**
manager ownership	0.001	0.001	0.1	**0.003***
	(1.3)	(1.19)	(0.99)	**(1.84)**
size	**-0.002*** **	0.0002	-0.001	**-0.002*** **
	(-3.63)	(0.25)	(-0.03)	**(-3.39)**
Global dummy	**0.07***	-0.05	-0.32	**0.14*** **
	(1.65)	(-1.26)	(-1.29)	**(3.14)**
Equity dummy	0.03	0.05	0.19	0.04
	(0.62)	(1.36)	(0.71)	(0.76)
HK average				**-0.11***
				(-1.67)
R-square	0.37	0.19	0.18	0.58
Observations	50	50	50	50

* statistical significance at a 10% level
** statistical significance at a 5% level
*** statistical significance at a 1% level

Table 4. Cross-Section Regression Results (Dependent: % HK Allocation)

	(1)	(2)	(3)	(4)
Constant	**35.4*** **	**45.7*** **	**33.64*** **	10.2
	6.26	**7.61**	**3.88**	0.91
Manager Experience	**-22.4*** **	**-24.5*** **	**-20.6*** **	**-12.7***
	(3.0)	**(3.65)**	**(-3.01)**	**(-1.89)**
size		**-4.01*** **	**-3.16*** **	-1.07
		(-3.21)	**(2.45)**	(-0.78)
Return			**-63.6***	**-74.3*** **
			(-1.87)	**(-2.4)**
Equity Dummy				**21.5*** **
				(2.96)
R-square	0.19	0.37	0.42	0.54
Observations	50	50	50	50

* statistical significance at a 10% level
** statistical significance at a 5% level
*** statistical significance at a 1% level

Table 5. Granger Causality Test

Dependent variable: HK allocation		**Dependent variable: Return**	
Constant	1.15	Constant	0.008
	(0.84)		(0.22)
Return (-1)	**-16.54***	HK allocation (-1)	0.003
	(-1.67)		(0.45)
R-square	0.17	R-square	0.014
Observations	16	Observations	16

* statistical significance at a 10% level
** statistical significance at a 5% level
*** statistical significance at a 1% level

Chart 1: Total issuing units of QDII funds

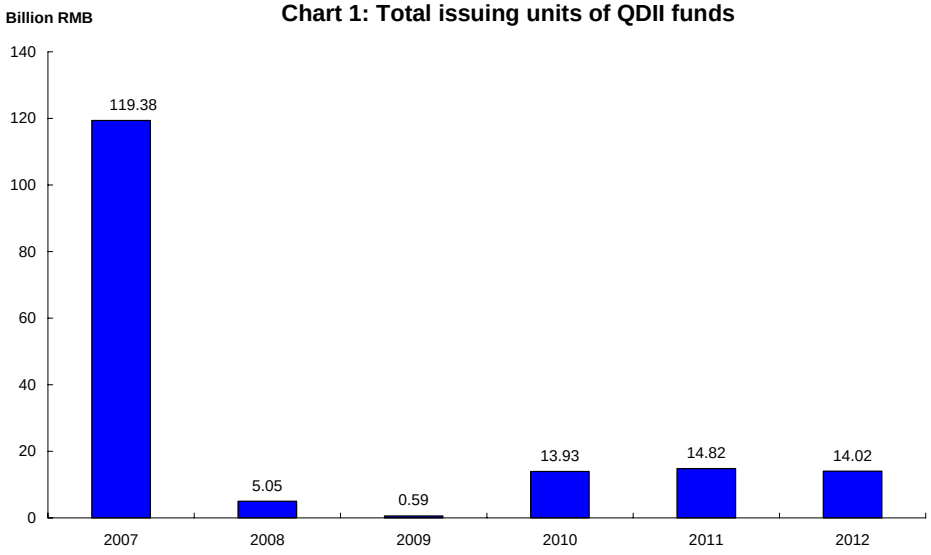


Chart 2: Year of inception of existing QDII funds

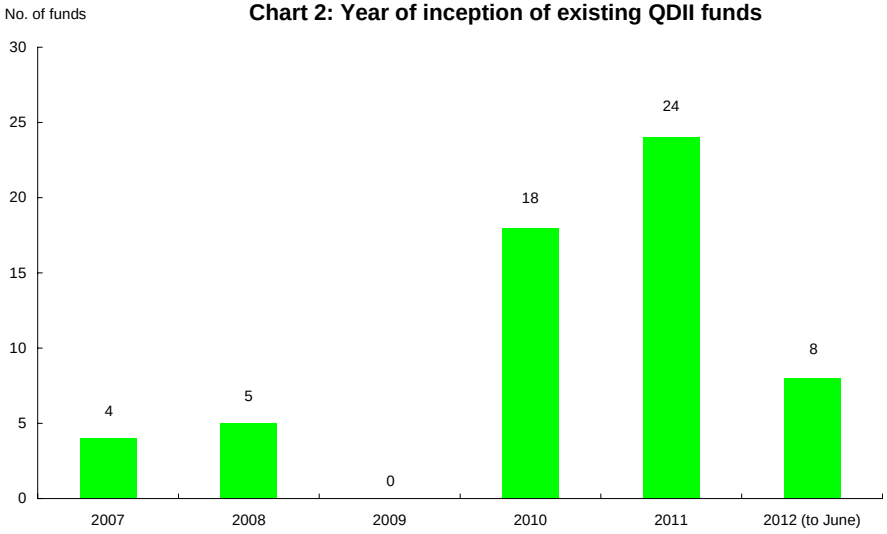


Chart 3: Investment Category

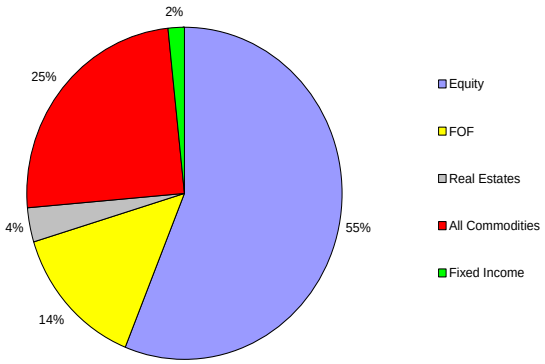
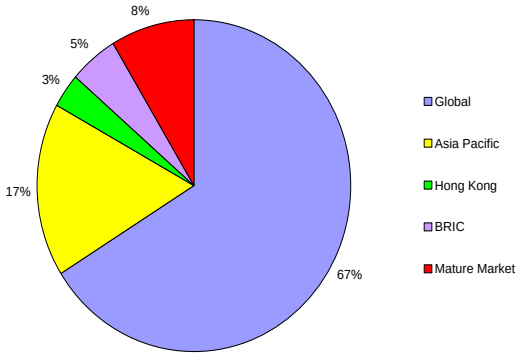


Chart 4: Stated Investment Region



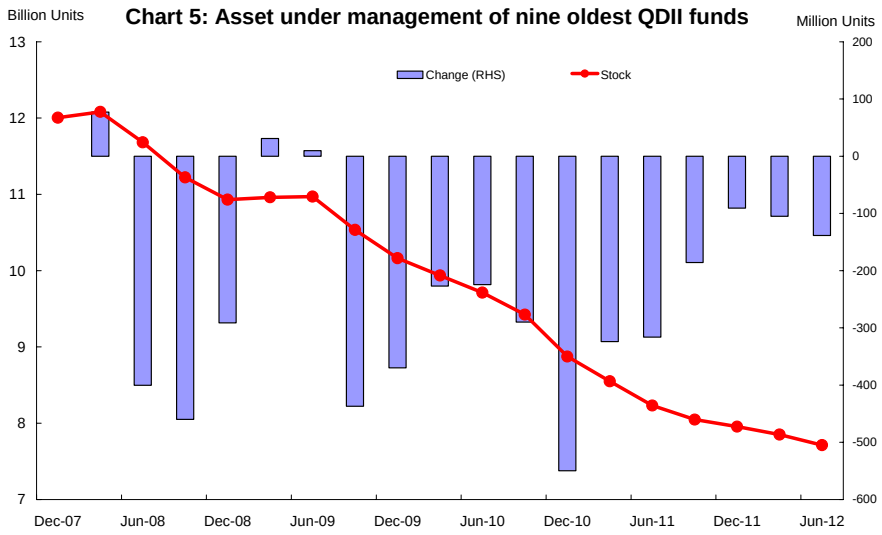


Chart 5: Asset under management of nine oldest QDII funds

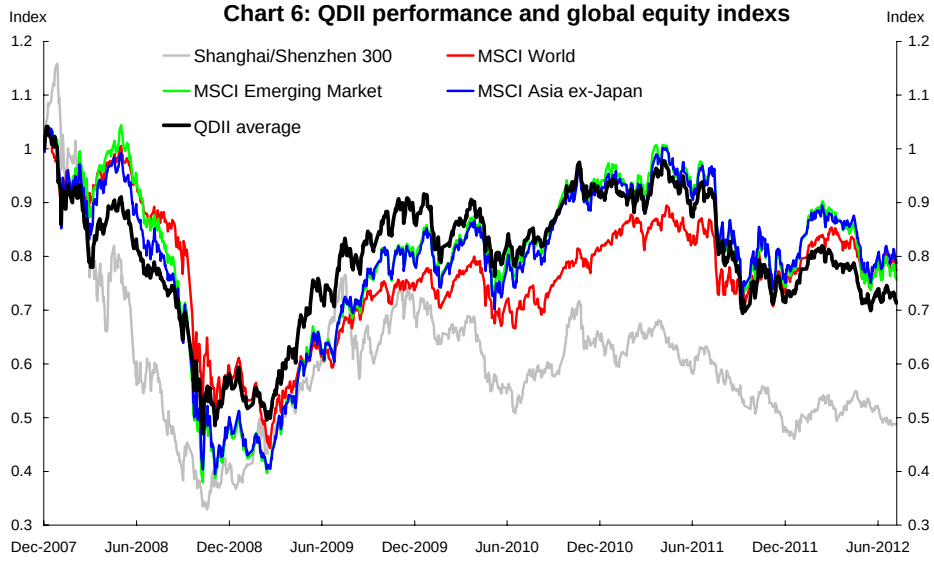
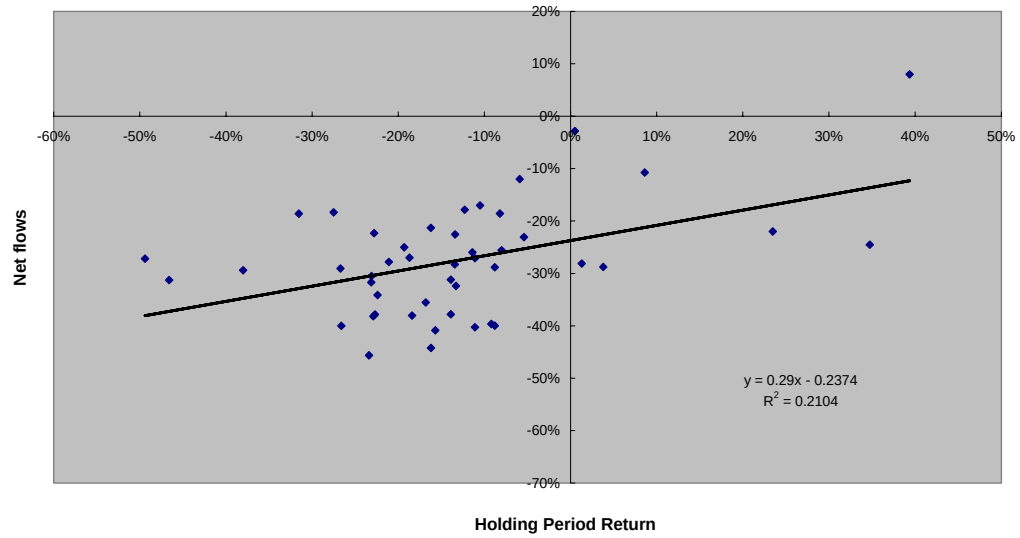
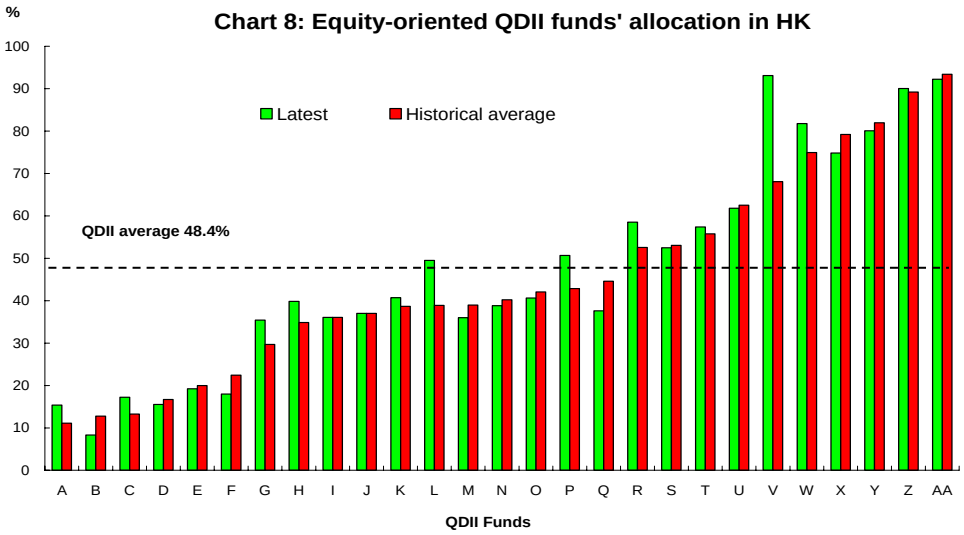
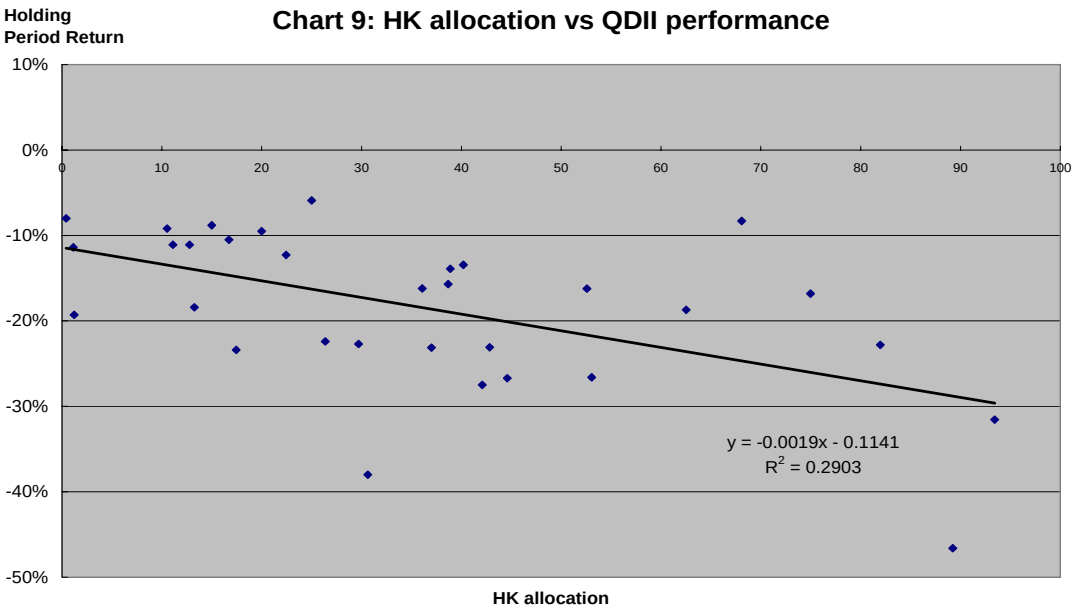


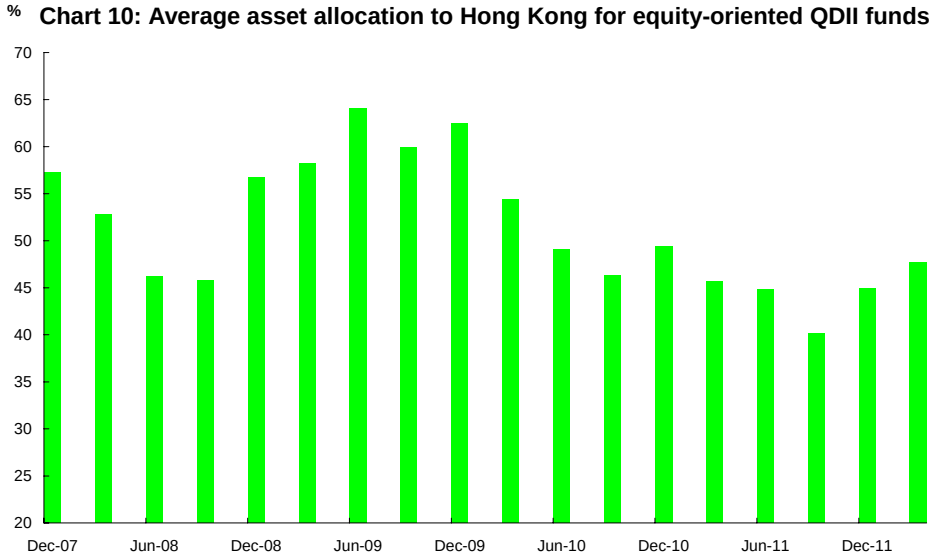
Chart 6: QDII performance and global equity indexs

Chart 7: QDII net flows vs. fund performance




%
Chart 8: Equity-oriented QDII funds' allocation in HK
Latest
Historical average
QDII average 48.4%
QDII Funds


Holding Period Return
Chart 9: HK allocation vs QDII performance
y = -0.0019x - 0.1141
R2 = 0.2903
HK allocation


%
Chart 10: Average asset allocation to Hong Kong for equity-oriented QDII funds

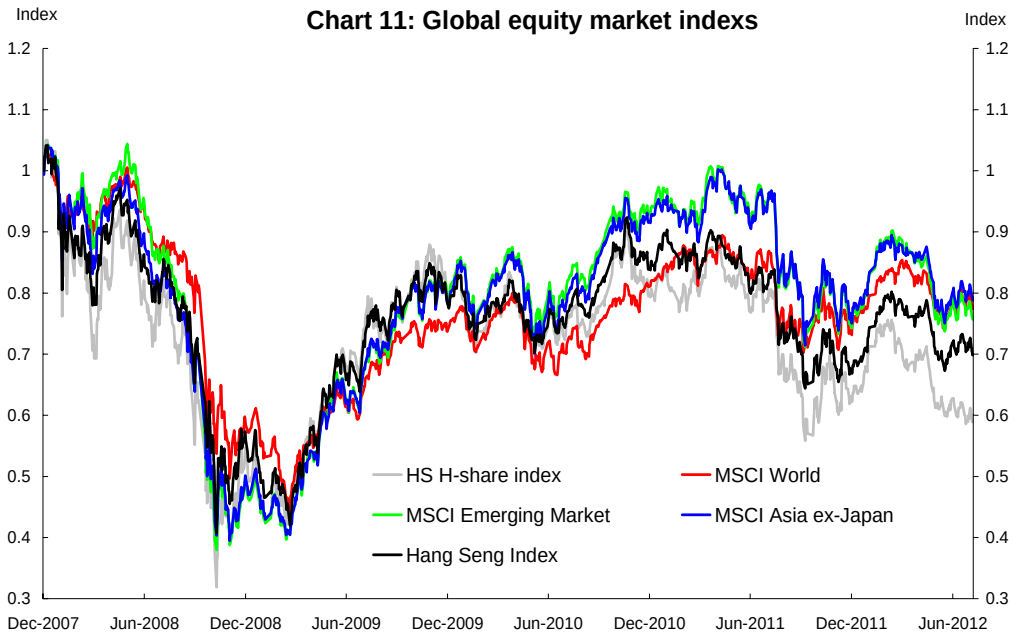


Chart 11: Global equity market indexs
Index
Index
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
Dec-2007
Jun-2008
Dec-2008
Jun-2009
Dec-2009
Jun-2010
Dec-2010
Jun-2011
Dec-2011
Jun-2012
HS H-share index
MSCI World
MSCI Emerging Market
MSCI Asia ex-Japan
Hang Seng Index

Appendix

Fund	English Name	Chinese Name
A	ICBC Credit Suisse Global Selected Stock **Fund**	工銀瑞信全球精選
B	CHINA MERCHANTS MERCHANTS GLOBAL RESOURCES EQUITY FUND	招商全球資源
C	China International Emerging Markets Stock Fund	上投摩根新兴市场
D	CCB Principal Emerging Markets Selected Stock Fund	建信新興市場
E	UBS SDIC Emerging Markets Stock Fund	國投瑞銀新興市場
F	Changsheng Global Prosperity Industrial Large-cap Selected Stock Fund	長盛環球景氣行業
G	Huatai-PineBridge Asia Leading Enterprise Stock Fund	華泰柏瑞亞洲
H	China International Asia-Pacific Advantage Stock Fund	上投摩根亞太優勢
I	CCB Principal Global Opportunity Stock Fund	建信全球機遇
J	China Southern BRICs Index Fund	南方金磚
K	ICBC Credit Suisse China Opportunity Global Balanced Stock Fund	工銀端信全球配置
L	GF Asia-Pacific (ex Japan) Selection Stock Fund	廣發亞太
M	Bank of Communications Schroder Global Selected Value Fund	交銀環球精選
N	China Universal Asia Australia Mature Market (except Japan)Advanced Selected Stock Fund	汇添富亞澳
O	China Merchants S and P BRICs Index Fund(LOF)	招商標普金磚
P	E Fund Asia Selected Stock Fund	易方达亚洲
Q	China Global Selected Stock Fund	華夏全球精選
R	Bosera Greater China Asia-Pacific Selected Stock Fund	博時大中華亞太
S	Fortis Haitong Greater China Selected Stock Fund	海富通大中華
T	Invesco Great Wall Greater China Stock Fund	景順長城大中華
U	Hua An Greater China Upgrade Stock Fund	華安大中華升級
V	China Southern China Mid and Small Cap Index Fund	南方中小盘
W	Fortune SGAM Overseas China Growth Stock Fund	華寶興業中國成長
X	Fortis Haitong China Overseas Selected Stock Fund	海富通海外精選
Y	Hua An Hong Kong Selection Stock Fund	華安香港
Z	Harvest Overseas China Stock Fund	嘉實海外中國股票
AA	Harvest Hang Seng China Enterprises Index Fund (QDII-LOF)	嘉實恒生中國