Reverse Takeovers:
The Other Side of the Poor Man's IPO

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Abstract

Reverse takeovers (RTOs), or Reverse Mergers (RMs) as they are usually referred to in the US, have been the subject of considerable public debate and regulatory scrutiny in recent years. The marked differences between the US and UK regulatory frameworks related to reverse takeovers in terms of definition, listing requirements, approval and the scope of such transactions offer the opportunity to reassess the effectiveness of such public listings. For private firms using the RTO route to go public, we identify three distinct groups of public entities which they acquire, ranging from non-operating, often bankrupt, mature shells to recently listed 'cash shells' and other active listed firms offering clear synergy potential. In sharp contrast to the US experience, we find that the latter group accounts for a significant proportion of UK RTOs, undertaken by firms looking for expansion through simultaneously conducting a synergetic acquisition and a public listing. Furthermore, these companies are often actively involved in acquisitions and SEOs soon after their public listing. All three types of UK RTO survive longer than their US counterparts and there is no evidence to suggest that their aftermarket performance is fundamentally different from their peers which opt for a traditional IPO listing.

Keywords: IPOs, Reverse Takeovers, Reverse Mergers

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1. Introduction

Reverse Takeovers (RTOs), or Reverse Mergers (RMs) as they are usually referred to in the US, offer an alternative to the traditional IPO route for going public. They refer to a transaction in which a private firm takes control of a public one and becomes listed as a result of the takeover or merger, thereby bypassing the usual IPO process. A number of well-known companies, on both sides of the Atlantic, have in recent years chosen the RTO method for their public listing: Bumi, Fastjet, West African Minerals, Berkeley Group and Burger King, for example, attracted considerable media attention at the time of their listings. RTOs are also used as a cross-listing mechanism, enabling foreign firms to gain a listing in another country by acquiring a local firm.

In 2008, the number of RTOs in the US was higher than the number of normal IPOs for the first time (Semenenko, 2011). Their popularity relates to the widely held, but sometimes mistaken, perception that under certain circumstances they are a more effective mechanism than IPOs in terms of cost and speed of completion. Moreover, as they do not have to raise any money at the point of listing their timing may also be less dependent on market conditions.

Despite the potential benefits in terms of speed and cost, RTOs have attracted considerable adverse publicity and regulatory attention. The controversy in the US was, to a certain extent, fuelled by the large number of Chinese RMs listed in the US between 2001 and 2010[1] and the surge in lawsuits in 2011 prompted by accounting problems and other irregularities. This led to intense debate and scrutiny by investors and regulators as a number of these cases ended in high profile class actions. According to the Stanford Law School (Compliance Reporter, 2011), a quarter of recent US security fraud lawsuits seeking class-action status in 2011 were related to Chinese RMs. As a result, stock prices in these companies fell more than 50% in the same year. Furthermore, the SEC has issued a number of warnings at different points in time cautioning investors about the potential risks associated with RMs related to the accuracy of their public filings, accounting irregularities and stock price manipulation (MacFadyen, 2011 and Aydogdu et al., 2007).[2]

As a result, in November 2011, the SEC approved tougher listing standards for companies using RMs in order to list on the major US exchanges. The new rules raised the level of regulatory scrutiny on RMs and delayed access to the US exchanges. Winston & Strawn (2011), however,

[1] From 2001 to 2002, Chinese RMs accounted for 85% of foreign-based RMs and 34% of all RMs listed in the US.
[2] In fact, Aydogdu et al. (2007) also find some evidence of sporadic positive returns surrounding the merger. Their results, however, do not show any evidence of persistent insider trading or price manipulation of these stocks.

argue that such changes may reduce the assumed benefits of costs and speed usually associated with going public through an RM.

The UK regulatory framework regarding RTOs is markedly different from that of the US in terms of types of transaction, shareholder approval, documentation, etc. In fact, RTOs are treated in exactly the same way as IPOs and Introductions.[3] However, in line with the regulatory changes in the US, the Financial Conduct Authority (formerly known as Financial Services Authority (FSA)) also recently announced tighter rules for RTOs as a result of the alleged irregularities in the merger between Vallar plc and PT Bumi Resources, the Indonesian coal mining company (Oakley, 2012).

The concerns about RTOs, however, go beyond the issues related to foreign listings. They are also linked to the widespread occurrence of significant underperformance of the listed entity in the years following the completion of such transactions and their low survival rates (Gleason et al., 2005 and Adjei et al., 2008). It is important to note, however, that the debate is potentially misleading as it fails to account explicitly for the variety of firms involved in this type of public listing. While it is widely recognised that RTOs often involve some sort of a shell public company, the fact that such transactions differ both in motivation and the type of the public entity involved is often overlooked.

The overwhelming majority of the academic evidence focuses on RTOs in general without explicitly accounting for the potential implications of such differences on the future activities and performance of these newly listed firms. An RTO may involve the takeover of a public entity with a messy history that has probably gone through bankruptcy proceedings; they are often referred to as natural or ‘mature shells’. ‘Virgin shells’, on the other hand, have had no previous operations and been constructed with the sole purpose of being acquired by a private firm. There is also third group which involves entities in a similar type of business seeking genuine synergy benefits from their merger. Gleason et al. (2006), using a relatively small sample of 121 RTOs in the US during the period 1987-2001, find that about 27% of participating public and private firms operate in the same industry, while 31% and 41% come from related and different industry sectors, respectively. Such proximity in industry suggests that expected potential synergies are an important consideration for using the RTO process to go public.

Given the marked differences between the US and the UK in terms of defining an RTO, the regulatory requirements for approval and execution and the underlying motivation behind the different types of such transactions, the purpose of this study is to reassess the characteristics, structure, viability and long-term performance for both RTO firms and their IPO counterparts. More specifically, we address the following questions. First, do the differences in the regulatory

[3] An Introduction is yet another route to obtaining public listing status, available, for example, in the UK and Australia. In contrast to the more traditional IPO process, a company listing through an Introduction does not raise any new funds, i.e. sell any new shares to the public, at the time of listing.

frameworks between the UK and the US have any implications for the motivation behind, survival and performance of RTOs? Second, for the same reasons, are RTOs different from their IPO counterparts in terms of plans for future growth, as they conveyed by their follow-on corporate activities in terms of raising equity capital and ordinary acquisitions. Third, as RTOs do not necessarily raise equity capital at the time of the listing, are they likely to be less sensitive to adverse market conditions? Thus, the overriding objective of our study is to enhance our understanding on the effectiveness of RTOs as a viable IPO alternative, after controlling for the regulatory framework and the motivation of the different types of such transactions.

Our results show that under the broad RTO classification there are three distinct groups of transaction driven by entirely different considerations. They range from mergers with mature shells, and Special Purpose Acquisition Companies (SPACs) offering both a listing and cash resources for potential future development, and to mergers with going concern public companies in a similar type of business offering viable synergy potential. Second, while in US the majority of RTOs involve shell companies used by private firms as a route for obtaining a public listing, the majority of UK RTOs involve firms with potential synergy gains. Furthermore, most UK RTOs also raise money at the time of going public and are actively involved in follow-on corporate activities like acquisitions and seasoned equity offerings as listed companies. Third, the underlying motivation of such transactions in terms of follow-on activities, are found to be broadly similar to ordinary IPOs. Fourth, the RTO firms' future survival and aftermarket performance depends on their initial motivation for listing and follow-on activities, as well as the type of RTO route.

On this basis the paper makes three distinct contributions to the RTO literature. First, the clarity of the regulatory framework and the transparency of the transaction both in terms of listing requirements and shareholder approvals may play a role in screening and monitoring RTO listings. Second, the motivation and plans for future corporate activity and important drivers of future performance. Third, RTOs under certain conditions can be effective IPO alternatives for going public.

The rest of the paper is organised as follows. Section I describes the UK regulatory framework for RTOs and highlights the key differences for the US equivalent regime. Section II provides a review of the literature on RTOs (RMs) and introductions. Section III describes the data and the methodology used in this study. Section IV presents the results while Section V concludes.

2. The UK regulatory framework

There are a number of important differences across countries in terms of regulatory requirements related to the definition of an RTO, shareholders' approval, required documentation and raising capital practices.

First, according to the UKLA guidelines, an RTO on AIM is defined as any acquisition or acquisitions in a twelve month period which for an AIM company would exceed 100% in any of the class tests; these are set in terms of gross assets, profits, turnover and amount paid in relation to target's market value. In terms of shareholders' approval and disclosure requirements RTOs are treated exactly in the same way as IPOs.[4]

Second, UKLA guidelines also require that any agreement which would result in a reverse takeover must be conditional on the consent of its shareholders. In US on the other hand shareholders' approval depends on the shell's company status of incorporation and listing; many states and the Stock exchanges require shareholder approval before a company can issue shares constituting more than 20% of the pre-transaction outstanding shares.[5] [6]

Third, UK RTOs often raise capital at the time of such transactions; this is similar to Australia where RTOs capital raisings are present in the large majority of cases (Brown *et al* 2012). In US, on the other hand, concurrent capital raisings happen only rarely; some private companies, however, may combine a reverse merger with a private investment in a public equity (PIPE) (Asquith and Rock 2011). The new entity of course may access capital markets at a later date when the stock has risen and the offering becomes less delusive. This is broadly similar to the two-stage listing process available through Introductions on the LSE. In terms of regulatory and institutional details, an introduction is identical to an IPO except that no shares are introduced, hence no money is raised.

Fourth, an RTO seeking readmission on the LSE needs to comply with exactly the same entry requirements as any other company applying for admission for the first time, including publication of prospectus and full accounting disclosures. The prospectus always refers to such re-admissions as reverse takeovers if they are classified as such under the UK Listing Authority (UKLA) guidelines. In such cases they will also have to fulfil various class tests as RTOs in the LSE. In the US as the exchange of shares between the two parties is considered as an offer of securities all that is required is for the shell company to prepare and circulate a private placement

[4] The recently proposed rules, however, to prevent UK plc companies from buying listed firms merely as a back door to change their listing category are more controversial. Traditionally, any listed UK acquiring another public company does not fall into the category of reverse takeover. Under the new proposals only acquisitions by a listed issuer of another listed issuer in the same listing category will not be treated as an RTO. (The Telegraph 28 August 2012).

[5] Following recent changes in the rules RM companies must now wait for one-year 'seasoned period' to elapse and maintain a minimum share price for a substantial period of time before they are permitted to list on a US exchange. More specifically, the new rules prohibit reverse merger companies from applying to list on a US exchange until the combined entity has traded for at least one year, after filing either in the US OTC market or on a regulated foreign exchange (Winston & Strawn, LLP, 2011).

[6] On November 2011, SEC approved tougher listing standards related to accounting and disclosure practices for companies using an RM to list on the main US exchanges. New rules raise the level of regulatory scrutiny and delay access to US exchanges. As a result they reduce the key benefits of speed and cost, historically associated with going public through a RM.

memorandum describing the terms of the deal and some information about themselves. This may be not necessary if the shareholders of the private company qualify as accredited investors. Applying the same entry requirements as IPOs and requiring the publication of a prospectus reduces information asymmetry and enhances the market's confidence on the performance of the re-admitted firms.

Last but not least, while it appears that the majority of US RTOs (RMs) involve shell companies[7] that are in this situation either as a result of termination of their normal operations or just they were explicitly formed as a public shell.[8] In sharp contrast, UK RTOs do not necessarily involve strictly defined shell companies either in terms of SPACs or just non-operating as a result of recent restructuring but also incorporate any other type of listed entity as the target company.

3. Related Literature

The RTO literature covers a wide range of issues related to the speed and cost of RTO transactions, the motivation and characteristics of firms choosing this route for a public listing, their aftermarket performance and survival and the potential implications of the regulatory framework on the choice of method for going public.

Although the speed and cost of completing an RTO are considered some of the key advantages of this method of listing, the empirical evidence is not always consistent with this view. In US, for example, while it is assumed that such transactions can be completed within 60 days at a cost considerably lower than the average 7% for IPOs, the actual costs in fact depend on the agreed percentage of stocks retained by the original shareholders in the new company *(*Makamson, 2010*)*. Furthermore, as RTO transactions involve shell promoters who charge fees in terms of a certain percentage of ownership interest in the newly created entity, the total cost of the transaction is not necessarily lower if full account is taken of such fees. Along the same lines, the speed advantages are also not always apparent. In US an RTO can be completed within 4 months but the actual completion rates vary depending on deal complexity and market conditions. Brown, et.al. (2013), using a sample of RTOs from the Australian Stock Exchange, also find that they can take longer to complete suggesting that speed is not a key motivation for RTOs. Furthermore, they also report that RTOs involved in fund raising tend to raise less capital in comparison to their matched IPO counterparts, suggesting that capital for growth is not a predominant consideration.

[7] SEC 2005 defines a shell, as any company as one with no 'nominal' operations, and with no or nominal assets or assets consisting solely of cash and cash equivalents as a shell company.

[8] There are three types of shell companies: A *Virgin shell,* is created with the sole intent of merging with unidentified single or multiple companies. A *Development stage shell*, is created with a business plan that fails to materialise while a *Natural shell,* develops when a firm is selling its operations and assets following bankruptcy. (Feldman 2002 and Lee et. all 2012).

To access the key determinants in the RTO vs. IPO choice, Gleason *et al* (2006) use the proxy statements by managers to shareholders describing these transactions. They report that the most commonly cited reasons for such transactions is the solid financial position of the private firm and growth prospects by moving into complimentary lines of business. They also report that at the time of going public, firms using RTOs tend to be smaller, less profitable and more levered than their IPOs counterparts of comparable size and industry. Also in line with self-underwritten IPOs they exhibit greater likelihood of financial distress and greater leverage in comparison to the matched IPO sample. Floros and Shastri (2009), in a comparison of RTOs with penny stocks IPOs, also find that RTOs tend to be smaller, have lower profitability and lower liquidity. More importantly, they also show that private firms often opt for RTOs because they plan to conduct strategic acquisitions using the publicly traded stock as the mode of payment. Arellano-Ostoa and Sandro (2002), also report that in contrast to the high quality firms that go public through an IPO, reverse takeovers are populated by smaller and largely unknown firms.

In one of the very few non-US studies, Brown et. al. (2013) also provide valuable additional insights into the characteristics and motivation of RTOs, or Backdoor Listings (BDLs) as they are sometimes referred, by using a sample from the Australian Stock Exchange (ASX) where the regulatory framework related to such transactions is considerably different from US. Although in Australia there is no formal regulation for RTOs, the ASX may impose re-admission requirements as on the LSE asking the merged entity to meet the initial listing requirements as it was applying for a new listing. ASX also differs from US in disclosure requirements by way of prospectus while concurrent capital raising are found in the majority of cases. Thus, RTOs in Australia are closer substitutes to IPOs than in the US. Nevertheless, they find that RTOs in Australia tend be at an earlier stage of development, less profitable and less liquid than their matched IPO counterparts. Interestingly a broadly similar pattern is reported by Poulsen and Stagemoller (2008) for the choice between an IPO and a sellout (the acquisition of a company by a public entity). Their evidence suggests that firms that go public through this latter route tend be lower growth firms with lower valuation ratios and earlier development stage. In that sense sellouts are associated with more information asymmetry broadly similar to that of their RTO counterparts.

The choice between an IPO and RTO also depends on timing considerations. In contrast to IPOs that are more likely to occur under 'hot' market and industry conditions, Brau et.al. (2003) and Semenenko (2011) show that private firms use public distressed firms as vehicles to go public when market conditions are unfavourable. On the other hand, private firms take control over public firms in good financial health during period of favourable market conditions. Post-takeover financial performance is very likely to be related to such changing patterns of activity. Furthermore, they also report that most of the private firms that are linked with a merger are small, uncapitalised

and they have low probability of survival. On the other hand, private firms merging with the firms that qualify as going concerns are similar to firms engaging in ordinary merger deals.

Derrien and Kecskes (2007) report similar timing patterns for Introductions on the LSE. They find that in cold markets firms substitute introductions for IPOs and such offerings occur at the beginning of IPO waves. They also argue that firms use this two-stage strategy to time the market twice, first when listing and second when issuing equity. As exactly the same type of flexibility is also available to RTOs this is an important additional strategic benefit in relation to IPOs.

Motivated by the recent debate on Chinese Reverse Mergers (CRMs) in US Jindra *et.al*. (2012) examine the cost and characteristics of CRMs in comparison to Chinese firms that had ordinary cross-IPO listings in US exchanges. During the period 2000-2010 the number of CRMs (100) was almost the same as the number of Chinese IPOs (111). They argue that if one of the key motivations for a CMR is lower up-front costs when compared with IPOs, it is reasonable that the companies involved would be smaller and less profitable than those listed through an IPO. They indeed find that CRMs are substantially smaller in terms of assets, have higher leverage and have lower analyst and institutional following. Moreover, CRMs have significantly underperformed Chinese IPOs. The cost advantage of CRMs almost disappears when account is taken of the litigation costs as a result, of the increased probability of class action and the associated costs. Lee et. al. (2012), however, find that Chinese RMs are generally healthier and perform better than either their US RM counterparts or a group of publicly traded firms matched on industry, size and date.

Adjei, et.al. (2008) shed some further light on another dimension of RTOs motivation and performance by examining the survival of RTOs in comparison to IPOs. In contrast to the common belief, they report that only 1.4% of the RTO sample do not meet the initial listing requirements for any of the exchange standards. Thus, inability to comply with the standards is not the key motivation for choosing this rote for their public listing. Nevertheless, 42.7% of the RTOs were delisted by the third year after the listing, in contrast to 27% of their IPO counterparts. Such a higher rate of failure may be partially due the lack of underwriter support but it is also consistent with a number of studies suggesting that RTOs are on average lower quality firms. Whether this, however, is due to just lower performance or to opportunistic behaviour without a specific plan for future growth remains an open question. Furthermore, Jampal, et.al (2012) argue that in addition to the financial performance, the survival of RMs relates also to the terms of governance characteristics of the new firm. They show that in addition to certain financial characteristics like interest coverage ratios and large public shells than private acquirers, the survival rates increase for firms with new CEOs; they also report a concave relation between the average board tenure and the probability of RM survival. On the other hand however, Gleason et.al. (2006) report that RTOs

outperform their matched traditional IPOs in the short term and generally exhibit comparable performance in the three years following their public listing.

Gleason *et al* (2006) also find that upon the announcement, there are significant increases in the price of the public firms; such gains, however, are not sustainable in the long term; there is only little improvement in operational and profitability measures over the subsequent 2-year period while, more than 50% of the sample does not survive the first 2 years after the completion of the RTO. It is interesting also to note that they find marked differences both in the industrial composition of their initial sample of RTOs and in its survival. More specifically, their analysis of the surviving entities suggests that 52% are involved in the same industry, 33% operate in complementary areas, and almost 15% move into different fields altogether. Such differences may be indicative of different motivations in the initial RTO transaction and a possible link between the motivation and aftermarket performance.

Finally, Carpentier et. al. (2012) take a wider perspective on the implications of certain aspects of the regulatory framework and they find that the choice of the listing method and regulation strictness have a positive impact on the long-run performance of newly listed firms. They also report strong evidence that IPOs in Canada perform better than RMs, both in terms of earnings and stock returns. This is consistent both with the bad reputation of RMs as a result of several cases of fraud, manipulation and insider trading and the reduced disclosure requirements for such transactions in comparison to IPOs. Further evidence into the implications of the regulatory framework is provided by Ignatyeva et. al. (2012). The argue that European SPACs are more flexible and able to complete their acquisitions more quickly due to less restrictive regulation at the European stock exchanges. Moreover, the overall average performance of European SPACs is relatively better in comparison to their US counterparts in spite their negative returns. In fact, smaller European SPACs perform better than the larger ones and even earn a positive return in twelve months after the decision date.

It is interesting to note, however, that in sharp contrast to the weight of the evidence on the effectiveness of RTOs as a viable alternative to IPOs, Banergee et.al (2013) find that the survival of RTOs is related to operating performance and not by the method of listing; furthermore they show that although the average RTOs' aftermarket performance is comparable to IPOs, they do find, however, that the median BHAR for RTOs is significantly lower than IPOs throughout the 36-aftermarket month period. Semeneko (2011) attributes the apparent underperformance for RTOs in comparison to IPOs to their initial overvaluation.

4. Sample and Methodology

The extant literature on RTOs is largely based on US RTO samples from SDC, supplemented by relevant SEC filings *(10-K, 10-Q and 8-K).* The sample sizes are rather small (maximum 314 observations for the period 1996-2008, Semenenko 2011) in comparison to IPOs.

Our basic RTO sample comes from the London Stock Exchange (LSE) statistics during the period January 1, 1995 and June 30, 2012. On the LSE list of new issues and IPOs summary such transactions are classified by issue type 'placing and re-admission', 'introduction re-admission', 'offer for subscription re-admission', and 'placing and public offer re-admission'. We compare the primary LSE sample with both the SDC and Zephyr databases and on the basis of the individual readmission prospectuses[9] exclude any RTOs that are not clearly meet the LSE definition of an RTO or do not involve a private company.

The final sample consists of 243 RTOs and 1643 IPOs for the sample period. Our data collection included a download of money raised at announcement and pre-announcement financials for the public and private firm from the LSE and SDC, Zephyr and Datastream respectively. The numbers were verified by manual process of cross-checking the data with the data available in the re-admission prospectus of the individual RTOs. For comparative purposes we also matched a sample of ordinary IPOs during the same time period to the RTO sample. Each RTO was matched with an IPO on the basis of approximate date of listing, industry classification and assets size, where we used the assets of the private entity of the RTO, i.e. the firm that was looking to go public.[10] For the purpose of this study we collected data for the follow on activities (M&A and SEO) three years post the effective date of both RTO and IPO. The M&A and SEO data was downloaded from Bloomberg.

A preliminary review of the public and private entities involved in RTOs clearly highlights significant differences among UK RTOs. Following a detailed review of the background, financials and reasons of acquisitions of the individual readmission prospectuses of firms involved, we identified three distinct groups of RTOs, i.e. Mature Shells, SPACs and Synergy.

Our first group of RTOs is the 'Mature Shell'; this is a publicly listed entity that has been listed for more than one year at the time of the RTO but is not operating. It is most likely to be a business which ran into financial difficulties but remained listed as a cash shell. This could also be a firm selling its operations and assets following bankruptcy. This group of RTOs is similar to a large number of the shells involved in US RMs. Our second group of RTOs involve a takeover of a Special Purpose Acquisition (SPAC), i.e. a newly listed firm with the sole intent of merging with unidentified single or multiple private or public firms within the first 12-18 months of going

[9] Prospectuses were downloaded from Perfect Fillings.

[10] Given the relatively small number of IPOs in certain years, the same IPO was sometime used to match a number RTOs across the three criteria.

public.[11] At the time of the RTO the public entity may have cash assets only and no sources of revenues; in that sense is another type of a shell, sometimes as a naked shell. Third 'Synergy RTO', is a publicly listed entity is fully operational and has been listed for more than one year before an RTO is announced. We call this type a Synergy RTO as it involves a genuine takeover of a (public) firm that is in the same type of business as the private acquirer with the intention to build a new larger public company that will benefit from the synergies between the two.

Long-term aftermarket performance estimates are based on buy-and-hold abnormal returns (BHARs) for each RTO. These are computed as:

$$BHAR = \frac{1}{N}\sum_{i=1}^{N}\left[\left(\prod_{t=1}^{T}(1+r_{it})\right)-\left(\prod_{t=1}^{T}(1+r_{bt})\right)\right] \quad (1)$$

where: r_{it} and r_{bt} are the raw returns on RTO i and the selected benchmark b at event month t.

We estimate BHARs using the FTSE All-Share Index for firms in the Main market and the FTSE Small caps index for AIM listings. The null hypothesis that the mean BHARs are equal to zero is tested using the skewness-adjusted t-statistic with bootstrapped p-values as suggested by Lyon, Barber and Tsai (1999) and adapted by Jelic, Saadouni and Wright (2005).

5. Descriptive statistics of RTOs and IPOs

Table 1 (panel A) shows the annual distribution of the sample of 1,643 IPOs and 243 RTOs that were listed on the LSE markets (Main and AIM) during the period January 1995 to June 2012. The number of completed RTOs accounts for 13% of the total number of observations (1643 IPOs and 243 RTOs) during this period. It is interesting to note the subtle differences in the annual distribution of issues between the two groups. While for example, the number of IPOs dropped significantly during the dot.com bubble in 2000-2001, the flow of RTOs was not affected; at the same time the number of such transactions increased in line with IPOs during the 2004-2006 recovery of IPO activity. Furthermore, during the recent crisis, when the number of IPOs dropped by 97% during 2007-2009, the decline of RTOs was relatively modest. More specifically, for the first time ever the number of 8 RTOs in 2009 was higher than the 4 IPOs during the same year. This is similar to Semenenko (2011) who finds that for the first time in 2008 the number of reverse mergers in US was higher than the number of regular IPOs. Thus, there is some evidence to suggest that going public for companies that meet the same regulatory requirements as IPOs but without the need to raise money at the same time reduces information asymmetry and makes it relatively easier for them to get a public listing during adverse market conditions. In fact, Floros and Sapp, 2011

[11] Our sample of RTO SPACs includes only transactions with private counterparty.

show that in US the number of RMs in each of the years during the 2001-2008 period, is greater than the number of traditional IPOs. They argue that this increase relates both to the introduction of SOX in July 2002 but also to the obligation of shell companies for regular filings making them more transparent to private acquirers and helped them to somewhat improve their negative image.

The table also shows that in sharp contrast to the US experience where RMs usually don't raise money at the time of the listing (Gleason et.al. 2005 and 2006), 61% of the total sample of UK RTOs raised money at the time of the listing. The average amount raised by RTOs is relatively small, £10.1m, in comparison to the £58.2m raised by the average IPO during the same time period. These large differences, however, are largely driven by a small number of very large IPOs; the median amount raised by IPOs is just £7.2m in comparison to £3.5 of the equivalent RTO. It is also worth noting that the overwhelming majority (85%) of the RTOs were listed on AIM, while the equivalent proportion of ordinary IPOs during the same period was below 70%.

Panel B shows the breakdown of our sample according to the three distinct types of RTOs. In stark contrast to the previous literature in this field, which focus mainly on the US experience where RTOs tend to involve a public shell company, Synergy RTOs emerge as the most common types with more than 50% of the sample falling into this category followed by SPACs (31%) and mature shells (17%). Furthermore, the relative annual breakdown shows a relatively low level of activity in the boom period (2004 – 2007) for Mature Shell RTOs but a significantly higher level of SPAC and Synergy activity in those years. This relatively higher level of SPAC activity may suggest that SPACs listings may be 'taking advantage of market condition' rather than having real economic motives to go public. The annual number of Mature shells, on the other, is relatively stable over the sample period. This reflects the nature of such transactions as they are more a corporate 'rescue' type of activity and will happen as opportunity arise to 'save' a struggling entity by combining it with another that needs cash. Interestingly, the highest relative activity of this type is in 2012.

Insret Table 1 here

6. The choice between IPO vs. RTO

A. Descriptive statistics

Table 2 reports descriptive statistics for the medians of total assets, revenue, profitability, cash holdings, total debt and a number of related performance indicators for whole sample of public and private RTOs firms, for each of the three groups separately and for the matching sample of IPOs. It is immediately apparent that in line with the US evidence (Floros and Sapp 2011), the typical private RTO entity of UK RTOs is in general smaller, less profitable and more levered than its

equivalent IPO counterpart. Furthermore, the publicly listed entity in an RTO is also generally smaller in size, in terms of assets and revenue, unprofitable but with high levels of cash on the balance sheet in comparison to its private counterpart. This is particularly true for Mature Shells public entities. On the other hand the Synergy RTO public and private entities are more similar IPOs than the SPACs and Mature Shells pairs. Our evidence is broadly consistent with US evidence showing larger firms in general are more likely to go public through an IPO rather than staying private (Chemmanur et.al 2007) or selling out to a public (Brau et. al. 2003). Our evidence also supports this view as IPOs have higher assets than the whole sample of RTOs and each of the three groups.

The assets for the median private firm of the Synergy RTOs group is £5.64m in comparison to £2.65m and £1.26m for the equivalent Mature Shells and SPACs RTOs respectively. Synergy RTOs also involve larger public companies in terms of sales operating at a profit in contrast to their Mature Shell and SPAC counterparts at the last year before the takeover. It is also interesting to note that in terms of assets, sales and profitability the profile of the private firms in Synergy RTOs is broadly similar to our matched IPOs sample listed on AIM during the same time period (Appadu et. al. 2013); suggesting that while for such companies a direct IPO could have been a feasible alternative they opted for an RTO instead on the basis of speed and cost advantages in going public and completing an acquisition at the same time. In this respect our results are consistent with Adjei (2008) who finds that only 1.4% of the US RTOs do not meet the listing requirements.

Panel B provides further evidence on the differences between IPOs and RTOs as a whole and their three distinct groups, showing details of their money raising activity at the time of going public. In contrast to the US experience, raising money is an important component of such transactions; 61% of all RTOs in UK raise equity at the time of going public.[12] The amount raised by the median RTO is £3.46ml which is about half of the amount raised by the equivalent IPO (£7.25ml) but this broadly consistent with their respective total assets and market values. On the other hand, however, the average amount raised by RTOs as a proportion of market value (41.5%) is higher than the equivalent 36.3% for IPOs. This predominantly due to Synergy RTOs that raise an amount equal to 57.8% of the market value clearly indicating that those companies that go public with a public entity in the same type of business and they do raise money (56.7%) they do so with the clear with a clear intention for future expansion. On the other hand, mature RTOs raise relatively small amounts of money (median £1.58 ml) both in absolute terms and in relation to their market value (15.8%). Not surprisingly SPACs raise relatively modest amount of money at the time

[12] For comparative purposes, all the mean and median estimates in Panel 2B are based only on all IPOs and the 61.2% of RTOs that raised equity at the time of going public; thus, 94 RTOs without money raised are excluded from the descriptive statistics of this table.

of transaction as probably rely on the significant cash reserves of the public partners for future growth.

Insert Table 2(A & B) here

B. Logit analysis: IPOs vs. RTOs

To assess the likelihood of a private firm's decision to go public through an RTO instead of the traditional IPO route and how each type of RTO differs from the other two we use a logit regression model based on company characteristics and market conditions.

In the logit regression (1), the dependent variable is set to 1 when there is an RTO and 0 for an IPO.

$$A_{it} = a_i + \beta_1(SIZE) + \beta_2(LIQ) + \beta_3(LEV) + \beta_4(ATO) + \beta_5(-3RET) + B_6(TECH)$$

We use a similar model to assess the choice between each of the three different types of RTOs (Mature, SPACs and Synergy) against the other two groups based on the characteristics of both the private and public entities in an RTO transaction. In this case the dependent variable is set to 1 for one of the three RTO groups and 0 for the other two. Thus, we run three separate logit models for each group as the dependent. In this latter set of logit regressions we also use data describing the characteristics of the public entity involved in the RTO transaction.

On the basis of previous RTO literature and the nature of such transactions we expect that firms using this route to go public are smaller, are at an earlier state of development with lower profitability and possibly limited balance sheet liquidity; there is also evidence to suggest that they cluster in certain industries; under such circumstances they are more likely to find it more difficult to attract widespread institutional interest to enable them to complete a successful IPO. This is particularly the case during periods of favourable market conditions when a number of more attractive firms are preparing for an IPO. We proxy the size of the private firm by the logarithm of Total Assets (Assets) and Balance Sheet liquidity (LIQ) by the ratio of cash and cash equivalents to total assets (Cash/Assets). We also proxy for leverage (LEV) by the ratio of total debt to total assets and efficiency by sales to total assets (ATO) as efficiency measure. We use the FTSE All Share index during the 3 months before the RTO/IPO as an indicator of market conditions and two

dummy variables that takes the value of 1 for Consumer services and Technology[13] firms respectively, and 0 otherwise.

For the separate logic regressions for each of the three groups of RTOs we use equivalent variables for the public entities of the RTO. We expect the public entities of mature RTOs and SPACs to hold proportionally higher levels of cash in their balance sheets, have lower asset turnover and be smaller in size in comparison their synergy counterparts.

Table 3, column 1 shows the results of the logit for the IPO vs RTO choice. Consistent with the univariate descriptive statistics in Table 2, the negative and significant coefficients for the assets and cash/assets of the private entities confirms that private entities in RTOs in general are smaller and holding lower proportion of cash to their total assets in comparison to their IPO counterparts. Although this is entirely consistent with the US evidence, it is important to note that such differences, in fact, are entirely due to SPACs and mature RTOs as their synergy counterparts are not different in size from IPOs. The negative and significant coefficient for the 3-month market return is also consistent with notion that RTOs time their listings during difficult market conditions.

Columns 2-4 show separate results for each of the three RTO groups. In the logit regression (2), the dependent variable is set to 1 when there is a Mature RTO and 0 otherwise; for regression (3) the dependent is 1 for SPACs and 0 otherwise, and for regression (4) the value is 1 for Synergy and 0 otherwise. The results highlight again the significant differences between the three groups of RTOs. First, the positive and significant coefficients for assets and debt to assets in column (4) indicate that the public entities of Synergy RTOs are larger and carry higher levels of debt than their Mature and SPAC counterparts. Second, the negative and significant coefficient in model (3) confirms that SPACs are indeed not operational as they searching for suitable takeover targets. Finally, it is interesting to note that the popularity of consumer services sector among RTOs is predominantly due to Mature shells, while they are less common among SPAC and Synergy RTOs.

Insert Table 3 here

7. Post-Listing Survival and Follow-on Corporate Activities

The marked differences in the operational characteristics between RTO and IPO and the three types of RTOs are likely to have direct implications on their survival and follow-on activities after the public listing and their aftermarket performance. It can be argued, for example, that the smaller size and lower profitability of RTOs are indicators of poor quality that effectively rules out a conventional IPO listing and subsequently to lower survival rates for such listings.

[13] Consumer services is the most common industry classification accounting for 24% of the total population of RTOs and Technology accounts for 13%.

Table 4 reports the survival rate of RTOs during the first 6, 12, 24 and 36 months of going public as a result of a takeover, bankruptcy or voluntary delisting; these are reported for the RTOs as a whole and for each of the three groups separately; for comparative purposes we also show the equivalent delisting rates for our matching sample of IPOs. The results show that while the survival rate of RTO firms is very similar within the first year of going public, both for the group as a whole and the three separate grouping, the pattern changes gradually over time. By the end of the 36-month period the survival rate of RTOs is 80% in comparison to an equivalent 90% rate for IPOs.

It is also worth noting that the RTO UK survival rate is lower than IPOs, it is nevertheless markedly higher than in the US. Gleason *et al* (2005), for example, report that only 46% of the companies in their reverse merger sample survive longer than 2 years in comparison to a robust 93% for IPOs. Broadly similar results are reported by Adjei *et al* (2008) and Jambal *et al* (2012). This suggests that the tighter UK regulatory framework in terms of shareholders approvals and raising money enhances transparency and improves the quality of such transactions.

Interestingly, in Panel B where the M&A reason (i.e. the firm was a target in a takeover) for delisting is removed, the difference in survival rates between IPO and RTOs is reduce to just 4% (91% vs. 87% respectively).

There also some differences in the survival rates over the 3-year period following the RTO differ across the three groups. While, for example, only 75% of SPACs survive the 3-year, the equivalent proportions for Synergy and Mature Shells are 85% and 77% respectively. Such differences, however, appear to be predominantly due to delistings related with takeovers. Excluding them the results in panel B suggest broadly similar survival rates for all three types of RTOs.

Insert Table 4 here

Table 5 (panels A and B) explore another important dimension of the potential differences in the underlying motivation for going between IPOs and RTOs, by tracking their follow-on corporate activities, in terms of acquisitions and raising additional equity capital, during the 3-year period following their public listing. Panel A shows the number and percentage of corporate events as a proportion of the total number IPOs and RTOs in the sample during the 6, 12, 24 and 36 months since going public. Panel B, on the hand, shows the percentage of active (at least one SEO or an Acquisition) IPOs/RTOs during the three time period since the public listing.

Values higher that 100% in panel A indicates that some of the IPOs/RTOs are involved in several follow-on activities. During the first 6 months of listing the 77 acquisitions account for 32% of the 243 IPOs in the sample at this point of time; on the other hand the 243 RTOs were involved

only in 25 acquisitions (10% of the sample during the same time interval). RTOs, however, become more active in acquisitions at a later stage of their public life; in fact by the end of the third year of listing the remaining 228 RTOs were involved in 252 acquisitions in contrast to only 223 such transactions by IPOs. This is mainly driven by a significant number of acquisitions made by Mature and Synergy RTOs. A broadly similar pattern of increasing corporate activity, across all three groups of RTOs is observed for SEO activity as well.

Further insights about the initial motivation and eventual performance of RTOs can be gleaned by the consistency and extent of follow-on corporate activities across the population of IPOs and RTOs. Table 5 (Panel B), shows that an almost identical proportion of IPOs and RTOs (66% vs 63%) have been involved in at least one corporate event by their anniversary of going public. In fact, 46% of RTOs had at least one acquisition in comparison to the equivalent 40% for IPOs. On the other hand, a larger proportion (43%) of IPOs raised additional equity capital through an SEO in comparison to 37% of RTOs. It is also interesting to note that the proportion of firms involved in acquisitions and SEOs is broadly equally spread across the three types of RTOs.

Insert Table 5 here

In-spite of the apparent similarities in the overall volume of corporate activity between IPOs and SEOs during the 3-year period following the public listing it could still be argued that drivers of such activities differ across the two groups. While for an IPO, for example, raising additional equity capital may be considered as the customary path for future growth, the inherent diversity of RTOs may necessitate a more direct approach, depending on performance and underlying fundamentals. RTOs, for example, planning for future growth through acquisitions may raise additional equity at the time of the RTO while the actual execution of their strategy may depend on subsequent performance.

In Table 6, we assess the potential differences in follow-on activities in terms of acquisitions and SEOs between IPOs and RTOs during the 3-year since flotation controlling for the market of listing (Main vs. AIM), whether an IPO/RTO raised capital at the time of listing, the abnormal performance (total return) at the end of the 36-month period since flotation and industry dummies for Consumer services and Technology. Column (1) show the results for all the follow on activities while column 2 and shows the results for acquisitions and SEOs separately.

As the IPO/RTO variable in column (1) takes the value 0 for IPOs and 1 for RTOs the positive coefficient suggests that RTOs are in fact marginally more active in terms of acquisitions and SEOs in comparison to their IPO counterparts and are spread across both markets. Looking

separately at acquisitions and SEOs, the significant coefficients for IPO/RTO clearly suggest that RTOs are equally active as IPOs in each of these types of corporate events. Acquisitions are more likely to take place in the Main market while SEOs are more popular across issues on AIM. Not surprisingly raising equity capital for RTOs is a reliable predictor for further corporate activity; while market strong aftermarket performance is also strongly related to corporate activity, both in terms of acquisitions and SEOs.

In short, the weight of the evidence in terms of survival rates, volume of follow-on corporate activity and its pattern, suggests that UK RTOs, in sharp contrast to their US counterparts, are not fundamentally different in these respects from their ordinary IPO counterparts.

Insert Table 6 here

8. Aftermarket Performance

Table 7 (panel A) reports 36-months equal and value-weighted BHARs for the samples of RTOs and IPOs, while panel B shows equivalent returns for each of the three RTO groups, i.e. SPACs, Mature Shells and Synergy RTOs separately. The sample covers the period January 1995 to June 2009 and BHARs are calculated for each new issue until the earlier of either their 3-years anniversary or the delisting date. We report results for the first 6, 12, 24 and 36 months excluding first-day returns, using two alternative benchmarks; the FTSE All-Share Index for issues listed in the Main market and the FTSE Small Cap index for issues listed on AIM. The number of issues included in the calculation of BHARs declines with the month of seasoning.

Panel A, shows that consistent with the RM evidence for US (Carpentier (2012), Semenenko (2011) and Banerjee (2013)) our equivalent UK sample also underperforms the relevant benchmarks during the 3-year period, at least in value-weighted terms. We find negative and statistically significant value-weighted BHARs throughout the 36 months period since the RTO public listing; they start from -7.80% in month 6 and gradually decline to -30.64% by month 36. The equivalent 36-month value-weighted BHAR for IPOs is a positive but not statistically significant 15.33%. It is interesting to note the striking difference in the pattern of market value-weighted BHARs between IPOs and RTOs. Consistent with previous studies, the value-weighted BHARs for our sample of IPOs are generally higher than their equal-weighted BHAR counterparts (statistically significant abnormal returns of -31.05%), suggesting that larger IPOs on average perform better than their smaller counterparts. In sharp contrast to this well established pattern, small RTOs appear to outperform their larger counterparts. To shed some further light into this issue we also estimated asset weighted BHARs for the samples of IPOs and RTOs. In this case the asset weighted BHARs for RTOs have the normal pattern, i.e. the larger RTOs in terms of assets

outperform their smaller counterparts, while the asset weighted BHARs for IPOs are broadly similar to their market value-weighted counterparts. In fact, while the correlation between assets and market value at the time of listing, for IPOs is 0.656 the equivalent for RTOs is just 0.430; this appears to be the direct result of the relatively higher valuations for RTOs in the AIM market in comparison to their IPO counterparts. In fact, the Asset/MV ratio for the average RTO in AIM is 5 times higher than the equivalent IPO valuation. The marked differences in market value to assets ratios are also related to the fact that such ratios for RTOs are based on the assets of the private firm, while the market value reflects the valuation of the combined entity.

Panel B reports equivalent performance estimates for Mature Shells, SPACs and Synergy RTOs separately. By the end of the 36-month period SPACs and Mature shells underperform their relative benchmarks in value-weighted terms by -63.77% and -32.59% respectively; the equivalent BHAR for Synergy RTOs is also negative -23.58%, but not statistically significant.

Insert Table 7 here

Finally to provide some further insights into the nature and drivers of the differences for the aftermarket among the three RTO groups, Table 8 reports multivariate regression results using the 36-month equally weighted buy-and-hold returns as the dependent variable. We control for company size at the time of the listing using the Market of listing, i.e. Main vs. AIM, and industry by using dummies for Technology and Consumer Services. We use return on assets as an indicator of operating performance and the 3-months premium/discount on investment trusts during the 3-month period before the public listing as an indicator of market sentiment. Model (1) shows the regression results for both IPOs and RTOs. The positive and significant coefficient for the IPO/RTO dummy confirms that RTOs perform relatively better than their IPO counterparts although the BHARs for both groups at month 36 are negative; not surprisingly we observe a positive and significant coefficient for return on assets across all six models confirming the strong relation between market and profitability. It is also interesting to note the negative and significant coefficients for market sentiment in models 1, 3 and 4 as they are consistent with the view that RTOs offer a relatively easier method of public listing during adverse market conditions.

Finally in models 4-6 we examine the 36-month aftermarket across the three RTO groups controlling again for market of listing and industry. The negative and significant coefficient for SPACs indicates that their performance is worse than the other two groups; on the other hand Synergy RTOs, in-spite of their negative BHARs by the end of the 36-months period, they still do relatively better than the other two groups of RTOs.

Insert Table 8 here

5. Conclusions

Using a sample of 243 Reverse Takeovers (RTOs) listed in UK during the period January 1995 to June 2012, we examine the characteristics, motivation, follow-on corporate activity and aftermarket performance for these corporate entities during the first three years of going public. We find that under the broad RTO definition there are three groups of firms that differ in terms of the nature of the public and/or private parties involved and their underlying motivation for going public through the RTO route. In contrast to the US experience, we find that majority (52%) of UK RTOs consists of firms looking for expansion through a simultaneous synergetic acquisition and a public listing. We also find that consistent with pattern of IPOs, firms choosing the RTO route to go public are also actively involved in acquisitions and SEOs, or both, soon after their public listing and remain active over the whole three-year period in the aftermarket. The mortality rate of RTOs (excluding takeovers as a reason for delisting) is only marginally higher than IPOs (7%) ranging from 12% to 14%, depending on type of RTO. Thus the UK evidence suggests that although an RTO is a quite distinct method for going public, the profiles of the companies involved are not very different from ordinary IPOs either in terms of financial characteristics at the time of their public listing and even in terms of survival and aftermarket performance; in fact our results suggest that their relatively poor performance in value-weighted terms is predominantly due to a relatively small number of large SPAC RTOs.

In short, we argue that the UK regulatory framework regarding RTOs appears to provide a viable alternative for a range of small companies aiming for a public listing. Our results come as a timely contribution to on-going discussions in the US and the UK about changes to regulation governing this type of transactions.

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Panel 1A: Annual distribution of IPOs and RTO activity during the period 1995-2012

The table shows the annual distribution of IPO and RTO transactions. The data on IPOs is from the Exchange (LSE) statistics website while the RTO data is sourced from the LSE, Bureau van Dijk and SDC Platinum and subsequently cross-referenced with the company prospectuses produced for the purpose of the listing.. Panel A compares the annual distribution of IPO and RTO activity, including the total money raised ($m) from both types of public listings. Panel B compares the annual frequency per the three types of RTOs in our sample, SPACs, Mature Shells and Synergy RTOs.

	IPOs		RTOs				
	Observations (#)	Money raised (£m)	Observations (#)	Without money raised (#)	With money raised (#)	With money raised %	Money raised (£m)
1995	11	53	4	4	0	0%	0
1996	82	419	2	2	0	0%	0
1997	53	273	7	4	3	43%	25
1998	71	7,119	11	5	6	55%	46
1999	77	10,951	9	4	5	56%	20
2000	201	9,276	13	5	8	62%	58
2001	78	4,892	13	2	11	85%	290
2002	54	3,983	17	8	9	53%	45
2003	50	2,586	8	5	3	38%	21
2004	214	4,375	23	4	19	83%	246
2005	261	8,471	43	18	25	58%	309
2006	200	13,534	41	14	27	66%	182
2007	144	11,096	14	4	10	71%	92
2008	30	3,227	13	4	9	69%	61
2009	4	414	8	4	4	50%	85
2010	49	8,879	10	3	7	70%	23
2011	46	5,780	5	2	3	60%	13
2012	18	374	2	2	0	0%	0
ALL	1,643	95,700	243	94	149	61%	1,515

Panel 1B: Breakdown of RTO activity: SPACs, Mature Shells and Synergy RTOs.

	Mature Shells		SPACs		Synergy	
	Observations (#)	%	Observations (#)	%	Observations (#)	%
1995	0	0%	0	0%	4	100%
1996	0	0%	0	0%	2	100%
1997	1	14%	1	14%	5	71%
1998	3	27%	0	0%	8	73%
1999	2	22%	3	33%	4	44%
2000	4	31%	3	23%	6	46%
2001	2	15%	3	23%	8	62%
2002	3	18%	5	29%	9	53%
2003	1	13%	2	25%	5	63%
2004	5	22%	5	22%	13	57%
2005	7	16%	17	40%	19	44%
2006	3	7%	20	49%	18	44%
2007	2	14%	6	43%	6	43%
2008	3	23%	3	23%	7	54%
2009	3	38%	3	38%	2	25%
2010	1	10%	3	30%	6	60%
2011	1	20%	1	20%	3	60%
2012	1	50%	1	50%	0	0%
ALL	42	17%	76	31%	125	52%

TABLE 2: Descriptive statistics for the public and private RTO entities at the time of the public listing

Table 2 shows key financial characteristics for the public and private entities for the whole sample of RTOs. The RTO entities have been matched – in terms of the approximate date of listing, industry classification and assets size (using the private entity assets) – with an IPO counterpart. The table also shows each of the three groups separately. The median values of *Total Assets, Sales, EBITDA* and *Cash* for each of the groups are in £m. The data is from the accounts of the individual entities at the time of listing or using the last published accounts prior to the public listing as reported in the prospectuses of individual transactions. Panel A shows descriptive for all RTOs in our sample. Panel B reports descriptive statistics related to the actual amount raised at the time of the public listing; the RTO statistics related only to the issues that actually raised money at this point in time.

Panel 2A: Financial characteristics for all IPOs and RTOs

		IPOs Sample	ALL RTOs		Mature Shells		SPACs		Synergy	
			Private	Public	Private	Public	Private	Public	Private	Public
Total Assets (£m)	Median	5.41	3.47	2.75	2.65	1.36	1.26	1.48	5.64	4.66
	Observations	242	242	239	41	42	76	73	125	124
Sales (£m)	Median	3.33	2.75	0.16	2.08	0.00	0.49	0	5.59	2.03
	Observations	231	240	240	41	42	75	74	124	124
Sales/Total Assets (%)	Median	72.56	92.04	6.08	107.78	1.34	57.59	0	92.48	44.83
	Observations	226	239	237	41	42	74	73	124	122
EBITDA (£m)	Median	0.10	0.03	-0.13	0.09	-0.19	-0.01	-0.08	0.25	-0.19
	Observations	226	239	240	41	42	75	74	123	124
EBITDA/Total Assets (%)	Median	4.83	1.80	-6.71	4.81	-22.16	-0.12	-5.69	4.20	-4.72
	Observations	219	238	237	41	42	74	73	123	122
Cash (£m)	Median	0.69	0.19	1.81	0.36	1.03	0.08	1.38	0.22	2.23
	Observations	230	237	239	41	42	74	73	122	124
Cash / Total Assets (%)	Median	16.33	7.94	88.80	16.31	100.00	8.33	100	5.83	69.84
	Observations	219	236	238	41	42	74	72	121	124
Debt	Median	0.86	1.77	0.34	0.70	0.34	0.42	0.06	2.76	0.85
	Observations	235	188	217	31	35	57	69	100	113
Debt / Total Assets (%)	Median	28.33	75.73	21.13	65.92	25.94	73.76	4.81	79.47	29.09
	Observations	231	187	215	31	35	56	68	100	112

Panel 2B: Raising money characteristics for IPOs and RTOs that raised money at the time of public listing						
		IPOs	ALL RTOS	Mature	SPACs	Synergy
Number of issuers raising money		244	149	28	50	72
% of issuers raising money	Mean	100%	61.2%	66.7%	66.7%	56.7%
Amount raised (£m)	Mean	54.81	10.12	4.69	9.77	12.47
	Median	7.25	3.46	1.58	2.75	4.40
Market Value (£M)	Mean	124.15	45.30	22.84	23.48	63.52
	Median	25.28	14.72	13.06	15.73	16.07
Amount raised/Market Value (%)	Mean	36.3%	41.5%	20.1%	25.1%	57.8%
	Median	30.4%	23.2%	15.8%	24.3%	25.9%

TABLE 3: The Choice between IPO and RTO and the choice between the three different types of RTO

The table shows the results from a logit regression for the choice of an IPO or an RTO public listing and the choice of the RTO type, based on a set of firm characteristics and market conditions. Two industry dummies have been included as they represent a significant proportion of the sample; Consumer services is the most common industry classification accounting for 24% of the total population of RTOs and Technology accounts for 13%. The dependent variable in model (1) is set to 1 for RTOs and 0 for IPOs. For models (2-4) the dependent variable is set to 1 for a specific RTO group and 0 for the other two. Z-statistics are reported in parenthesis; *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively.

	IPO vs. RTO (1)	MATURE (2)	SPACs (3)	SYNERGY (4)
Assets (prv)	-0.187*** (2.50)			
Asset (pbl)		-0.345*** (-2.72)	-0.264*** (-2.58)	0.439*** (4.29)
Cash/Asset (prv)	-0.874** (-2.00)			
Cash/Asset (pbl)		-0.039 (-0.72)	0.058 (1.53)	-0.215 (-1.3)
Debt/Assets (prv)	0.655*** (3.38)			
Debt/Assets (pbl)		0.262 (1.03)	-1.657*** (-2.43)	0.517* (1.77)
Asset Turnover (prv)	0.012 (-0.15)			
Asset Turnover (pbl)		0.080 (1.36)	-0.489** (-1.95)	0.075 (1.17)
-3M Market Return	-4.551** (-2.34)	-4.044 (-1.35)	1.037 (0.43)	0.567 (0.26)
Technology	-0.378 (-1.14)	0.907 (1.47)	-0.639 (-1.20)	0.200 (0.43)
Consumer Services	0.072 (0.27)	1.348*** (2.83)	-1.028** (-2.170)	-0.074*** (-0.20)
Intercept	1.370** (2.50)	0.223 (0.23)	2.243*** (2.660)	3.491*** (4.02)
No. observations	385	209	209	209

TABLE 4: Survival rates for IPO and RTOs

The table reports the results of a survival analysis for IPOs and RTOs as whole and by RTO type. For each time period (6 months from the public listing, 12, 24 and 36 months from the listing) we show the percentage of firms which survived during the period. Note that the full sample size will decrease as the time period length increase (n=243 will decrease with time t) as some firms in our sample were listed in the last three years hence their survival rate is still to be determined. Panel B, shows the same analysis as Panel A but excluding the firms which delisted because it was a target in a takeover.

		All	All	Mature shells	SPACs	Synergy
		IPO	RTO	RTO	RTO	RTO
Panel A: Percentage of firms surviving Voluntary delisting, Bankruptcy, or Takeover during the period						
6 months survival rate	%	100%	98%	100%	99%	98%
	Observations	242	239	42	75	122
12 months survival rate	%	98%	98%	98%	99%	97%
	Observations	238	235	40	74	121
24 months survival rate	%	95%	90%	90%	85%	93%
	Observations	227	213	37	63	113
36 months survival rate	%	90%	80%	77%	75%	85%
	Observations	203	182	30	53	99
Panel B: Percentage of firms surviving Voluntary delisting, Bankruptcy, excluding Takeovers, during the period						
6 months survival rate	%	100%	99%	100%	100%	98%
	Observations	242	240	42	76	122
12 months survival rate	%	98%	98%	98%	100%	97%
	Observations	238	236	40	75	121
24 months survival rate	%	96%	93%	95%	89%	95%
	Observations	228	221	39	66	116
36 months survival rate	%	91%	87%	87%	86%	88%
	Observations	206	198	34	61	103

TABLE 5: Follow-on Activity

The table shows the analysis of follow-on activity of IPO and RTO matched firms, per RTO type. In Panel A, for each time period (6 months from the public listing, 1, 2 and 3 years from the listing) we show the number of follow-on events (acquisitions or SEOs) as a proportion of the number of firms. Note that the full sample of firms will decrease as the time period length increase as some firms in our sample were listed in the three years before the data collection cut-off date. Panel B shows the same analysis as Panel A but takes instead the number of firms with at least one event, i.e. which were active during the given time period, as a proportion of the number of firms.

Panel A: Number of follow-on corporate events as a proportion of number of firms						
		IPOs	RTOs			
		ALL	ALL	Mature Shells	SPACs	Synergy
6 months Acq. Rate	%	32%	10%	7%	18%	6%
	Events (#)	77	25	3	14	8
1 year Acq. Rate	%	49%	31%	24%	41%	27%
	Events (#)	118	75	10	31	34
2 year Acq. Rate	%	80%	73%	98%	66%	70%
	Events (#)	191	174	40	49	85
3 year Acq. Rate	%	99%	111%	149%	99%	106%
	Events (#)	223	252	58	70	124
6 months SEO rate	%	13%	10%	5%	11%	11%
	Events (#)	32	24	2	8	14
1 year SEO Rate	%	24%	24%	17%	21%	28%
	Events (#)	58	58	7	16	35
2 year SEO Rate	%	48%	53%	49%	58%	52%
	Events (#)	115	126	20	43	63
3 year SEO Rate	%	64%	70%	72%	76%	67%
	Events (#)	145	160	28	54	78
6 months Events rate	%	45%	20%	12%	29%	18%
	Events (#)	109	49	5	22	22
1 year Events Rate	%	73%	55%	41%	63%	55%
	Events (#)	176	133	17	47	69
2 year Events Rate	%	129%	127%	146%	124%	121%
	Events (#)	306	300	60	92	148
3 year Events Rate	%	163%	181%	221%	175	173%
	Events (#)	368	412	86	124	202

Panel B: Number of firms with at least one event as a proportion of no of firms

		IPOs	RTOs			
		ALL	ALL	Mature Shells	SPACs	Synergy
6 months Acq. Active	%	22%	8%	7%	12%	6%
	Events active firms (#)	53	19	3	9	7
1 year Acq. Active	%	28%	21%	17%	23%	22%
	Events active firms (#)	68	51	7	17	27
2 year Acq. Active	%	36%	39%	41%	32%	42%
	Events active firms (#)	86	92	17	24	51
3 year Acq. Active	%	40%	46%	49%	46%	45%
	Events active firms (#)	90	105	19	33	53
6 months SEO active	%	12%	8%	5%	5%	10%
	Events active firms (#)	28	19	2	4	13
1 year SEO active	%	19%	18%	17%	17%	19%
	Events active firms (#)	45	44	7	13	24
2 year SEO active	%	35%	32%	34%	31%	32%
	Events active firms (#)	83	76	14	23	39
3 year SEO active	%	43%	37%	41%	37%	36%
	Events active firms (#)	98	84	16	26	42
6 months Events active	%	28%	14%	12%	14%	14%
	Events active firms (#)	69	34	5	11	18
1 year Events active	%	41%	33%	32%	32%	34%
	Events active firms (#)	99	79	13	24	42
2 year Events active	%	58%	56%	63%	51%	56%
	Events active firms (#)	138	132	26	38	68
3 year Events active	%	66%	63%	69%	63%	61%
	Events active firms (#)	149	143	27	45	71

Table 6: Follow-on Corporate Activity

The dependent variable in equation (1) is the total number of acquisitions and SEOs during the 3-year period since the public listing, while the dependent variables in columns (2) and (3) cover each of the two types of activity separately. The IPO/RTO variable takes the value of for RTOs and 0 for IPOs. The dummy for Main/AIM is equal to 1 for issues listed in the Main market and 0 for AIM. Raise capital takes the value of 1 for issues that raised capital at the time of listing and 0 otherwise. BHAR36 is the Buy-and –Hold abnormal return for an issue relative to the FTSE All-share index or the FTSE Small-Cap index, as the market benchmark. Two industry dummies have been included as they represent a significant proportion of the sample; Consumer services is the most common industry classification accounting for 24% of the total population of RTOs and Technology accounts for 13%.

	ALL (1)	Acquisitions (2)	SEOs (3)
IPO/RTO	0.438* (1.70)	0.289 (1.31)	0.149 (1.30)
AIM/MAIN	0.448 (1.31)	0.653** (2.00)	-0.204** (-1.96)
Raise Capital	0.721** (2.54)	0.469** (2.00)	0.252** (1.74)
BHAR36	0.499*** (3.71)	0.368*** (3.73)	0.130** (2.38)
Technology	-0.681*** (-3.33)	-0.249 (-1.43)	-0.432*** (-4.06)
Consumer services	0.306 (1.08)	0.483** (1.94)	-0.177* (-1.63)
Constant	0.898*** (2.51)	0.348 (1.11)	0.551*** (3.54)
Adjusted R^2	0.071	0.068	0.035
No of Observations	471	471	471

Table 7: Buy-and-Hold Abnormal Returns

The table shows the BHAR for the IPO and RTO samples in Panel A and per RTO type in Panel B. The BHAR are adjusted to the FTSE All-Share Index (Main IPO or RTO) or the FTSE Small-Cap Index (AIM IPO or RTO). *EW* is the equally-weighted portfolio, *VW* is the value-weighted portfolio. Observations are the number of companies in the portfolio at each time period (month +6, +12, +24 and +36 from the month of listing.

Panel A: RTOs and matched IPO sample								
	IPOs				RTOs			
	Month 6	Month 12	Month 24	Month 36	Month 6	Month 12	Month 24	Month 36
EW	2.42%	-9.50%*	-15.74%**	-31.05%***	-7.35%**	-12.25%**	-17.14%*	-13.15%
T-test	0.48	-1.62	-1.72	-3.7	-2.14	-2.19	-1.83	-0.84
VW	7.55%	-11.23%	11.67%	15.33%	-7.80%**	-21.65%***	-33.40%***	-30.64%**
T-test	0.67	-1.36	0.92	1.2	-2.36	-3.03	-3.24	-2.39
Observations	242	238	221	201	237	232	212	180

Panel B: Three RTO groups												
	Mature shells				SPACs				Synergy			
	Month 6	Month 12	Month 24	Month 36	Month 6	Month 12	Month 24	Month 36	Month 6	Mont12	Month 24	Month 36
EW	-3.29%	-2.23%	-3.81%	-28.31%	-16.53%***	-22.77%**	-42.76%***	-49.29%**	-3.15%	-9.28%	-7.13%	-10.67%
T-test	-0.35	0.06	-0.10	-1.47	-2.55	-2.21	-3.05	-2.02	-0.66	-1.39	-0.53	0.59
VW	-9.89%	-15.83%	-20.28%	-32.59%**	-23.63%***	-29.14%***	-52.44%***	-63.77%***	-3.97%	-20.77%**	-30.84%**	-23.58%
T-test	-1.12	-0.96	-0.84	-1.79	-3.74	-3.53	-4.98	-4.85	-0.97	-2.26	-2.34	-1.44
Observations	41	40	37	30	74	72	63	52	122	120	112	98

Table 8: Multivariate Cross-Sectional Regressions of 36-Month Aftermarket Performance for RTOs and IPOs

The dependent variable is the Buy and Hold abnormal return for RTOs and IPOs relative to the FTSE All-share Index or the FTSE Small-Cap index, as the market benchmark. The independent variables are: A dummy variable with the value 1 for RTOs and 0 for IPOs, the market of listing on the LSE that is equal (1) for the Main and (0) for the AIM. The return on assets (EBITDA/Assets) at the time of the listing, industry dummies for Consumer Services and Technology (these two represent a significant proportion of the sample; 24% and 13% of the total population of RTOs respectively; market sentiment is proxied by the premium/discount of investment trusts during the 3-month period before the public listing.

	ALL (1)	IPOs (2)	All RTOs (3)	Mature RTOs (4)	SPAC RTOs (5)	Synergy RTOs (6)
RTO(1)/IPO(0)	0.189* (1.62)					
Main(1)/AIM(0)	0.689*** (3.14)	0.574*** (2.86)	0.881** (2.30)	0.888** (2.31)	0.771** (1.92)	0.785** (1.99)
Return on Assets	0.003** (2.38)	0.002* (1.67)	0.006*** (3.37)	0.005*** (3.19)	0.003* (1.78)	0.003*** (2.26)
Market sentiment	-0.032* (1.60)	-0.008 (-0.38)	-0.049* (1.57)	-0.051* (-1.57)	-0.041 (-1.32)	-0.047 (-1.44)
Technology	-0.404*** (-2.35)	-0.234 (-1.17)	-0.577** (-2.31)	-0.560** (-2.31)	-0.611*** (2.39)	-0.577** (-2.29)
Consumer services	-0.336** (-2.37)	-0.207 (-1.51)	-0.487** (-1.88)	-0.461*** (-1.84	-0.546** (-1.94)	-0.492** (-1.90)
Mature				-0.187 (-0.83)		
SPACs					-0.388* (-1.58)	
Synergy						0.395* (1.65)
Intercept	-0.522*** (-3.94)	-0.391*** (-2.43)	-0.431** (-2.35)	-0.433*** (-2.36)	-0.222 (-1.02)	-0.619*** (-2.69)
R2 adjusted No. of observations	0.051	0.061	0.038	0.067	0.074	0.078
No. of observations	359	182	177	177	177	177