Institutional Investors in the Czech Voucher Privatisation

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Abstract

Voucher privatisation that proceeded in the Czech Republic in the 1990s was a realisation of a unique experiment which resulted in the transfer of almost half of state-owned enterprises to private hands within two years. A substantial part of these private hands was represented by intermediaries – the investment privatisation funds (IPFs). Their presence in the privatisation is often criticised as the cause of the extensive tunnelling. The aim of the paper is to find out how these funds performed after the privatisation. Using the standard Capital Asset Pricing Model, with OLS parameter estimations, I conclude that the so-called tunnelling was not as extensive, and that the privatisation funds were not as harmful for the privatisation as is believed.

Keywords

Investment Privatisation Funds, Voucher Privatisation, Tunnelling, Asset Stripping

I.   Introduction

At the beginning of 1990, after the communist regime had ceased and the new government of national unity was established, the need to remove the structures of the socialist economy was utter. One of the most binding structure, that was at the same time impossible to be removed instantly, was the state ownership. The methods of the privatisation were numerous, but the one that was entirely new, and that is questioned up to now, was the voucher privatisation.

The voucher privatisation's aim, narrowly defined, was simple; to transfer the property rights quickly, with the guarantee that everybody can join. It was, in fact, a simple process; the individuals obtained vouchers and used them instead of money to bid for companies' shares. Benefits are obvious. First, the vouchers' purchasing power did not necessarily have to match their price. This feature ensured that the broad population could be involved. And second, sales of the vouchers could be restricted to a preferred group, such as nationals. Moreover, there were side-effects that seem even more important in the long run. The most

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important aim from this point of view is what Žídek (2017, p. 225) writes: *"Establishing a positive relationship of citizens to the market economy and gaining experience in living with it."* Thus, the voucher privatisation allowed the population to gain experience with the market economy relatively cheaply.

The emergence of the market economy was an aim that was, de facto, fulfilled immediately. For those who wanted to join the privatisation but not the bidding, firms that would do the service for them showed up instantly. These were the investment privatisation funds. They, together with the individual investors, represented the demand side in the voucher privatisation. The general perception of their presence in the privatisation was ambiguous. At first, the funds were suggested; mainly by foreign advisers such as Fischer (1991), that is to say. After the initial rush the funds caused by their advertising campaign, they were praised for advertising not only themselves but the privatisation as such (Young, 1997). As soon as the privatisation was finished, the funds were expected to manage the firms, and they eventually failed to meet the expectations (Myant, 2013). Consequently, the funds' attendance was, and still is, deemed to be a failure.

The aim of the text is to find out whether the funds' attendance in the privatisation was a failure. Specifically, I compare the performance of the funds to the situation on the market to see whether or not they were different from what could be expected. This allows to conclude whether or not the investors would be better off holding shares of the privatised corporations instead of shares of the privatisation funds. I proceed from a brief overview of the expectations put on the funds, through the reality of their performance, and specific examples of the funds that initiated the fraudulent activities. My arguments are supported with econometric modelling in the last section. The results serve in the conclusion where I answer the question whether the tunnelling was a rule or whether it was an exception.

II.   IPFs in the voucher privatisation

Expectations put upon the IPFs

One of the first authors who considered the mutual funds' participation in the Czech privatization was Fischer (1991). Along with many other authors (see, for example, Estrin et al., 1995; Fitzsimmons, 2002; Frydman and Rapaczynski, 1993; Hinds, 1991; Savas, 1992; Tomass, 1999), Fischer mentions the threat that shares would be widely dispersed, resulting in corporate governance issues. The authors agree on the outlook that any change in the enterprises would be difficult to push through if there was a large number of owners, each possessing only a tiny, hence indecisive share. Under these circumstances, the owners would, in fact, never be able to execute their rights. In other words, the collective action problem would arise.

On the other hand, the legislation did not permit the funds that were managed by one investment company own together more than 20 per cent of a company. Black (1990, p. 608) considered that *"institutional investors, while large, may not be large enough."* The author's insight framed what was later criticised in the case of the Czech Republic. That is, even though the funds were incorporated into the privatisation to ensure some concentration at least, they were not permitted to choose the concentration freely.

Ellerman (1999) shows the contradiction the funds faced. He writes that although the funds were restricted in the share they could hold in a company, they were de facto expected to be the vehicles for restructuring the enterprises. The funds were, however, lacking the incentives to do so, because 80 per cent of the capital gains would flow to the rest of the owners, perhaps another IPFs. Under such circumstances, the funds were more likely motivated to seek different sources of income than gains from restructuring the companies they hold. Hewer (1997) concludes that most funds were passive investors and had not bothered to replace the managers of the companies they controlled. The author continues that the IPFs found the trading of shares, transfer pricing, and non-transparent equity transactions far more lucrative than striving for profits and dividend payment through efficient corporate governance

The non-transparent equity transactions were in the end the most dubious aspect of the whole privatisation. Such behaviour is, especially in the Czech Republic, widely known and named by the term tunnelling. Johnson et al. (2000) define the tunnelling as *"expropriation of minority shareholders in the Czech Republic – as in removing assets through an underground tunnel"* (p. 22). In the article, this definition was used to describe the transfer of assets and profits out of firms for the benefit of those who control them. The authors saw the problem partly in the characteristics of the civil law, which emphasizes the predictability of the law. The actors (in this case, the IPFs' managers) were thus invited to seek ways to conform to the letter of the law even though the transactions might be considered as unfair or immoral. In other words, the *"profits were extracted through various channels that would, in most cases, be illegal in any civilised country"* (Kotrba et al., 1999, p. 29).

IPFs in the first wave of the voucher privatisation

For the first wave, as many as 429 IPFs participated, which is an impressive number alone, not to mention that the number of companies that were to be privatised was 1,491. That is, there were only three times more companies to be privatised than the companies which wanted to privatise them. The competition among the IPFs was thus strong, which resulted in an aggressive advertising campaign

The first wave began on 17th February 1992, and the holders of investment vouchers were first given time to decide whether they would entrust their vouchers to the funds, or they would invest individually. For the first wave, the IPFs acquired some 72 per cent of total vouchers and thus found themselves in a very strong position – the total book value of the enterprises offered in the first wave was nearly CSK 300 bil. Needless to say, the distribution was not uniform; ten largest funds acquired 56 per cent of all the IPFs' vouchers (CKP, 1995). The concentration reveals to be even stronger when the vouchers are divided by the investment companies, that is, by the IPFs' administrators. Kotrba et al. (1999) show that the top ten investment companies captured 67 per cent of all vouchers that were entrusted to the IPFs.

The first wave then proceeded in a fashion set by the law. There were five rounds in total, with the fifth being finished in December 1992. Subsequently, the shares were to be issued,

a process that began in May 1993. Next turn was the IPFs', as they were to evaluate their portfolio, issue their shares, and distribute them among their shareholders.

IPFs in the second wave of the voucher privatisation

The second wave started in April 1994 and was not much different from the first wave. Tříska (2002) even admits that the second wave was somehow a "routine" task, proceeding in the atmosphere which was incomparable with the first wave. The second wave was therefore perceived as a natural conclusion of the voucher privatisation policy. A total of 349 IPFs registered. In absolute terms, the number was smaller than in the first wave. However, in real terms, the number of IPFs increased considerably in the second wave. This is because out of the 429 IPFs in the first wave, only 265 were Czech; the remaining were Slovak, and these could not attend the second wave in the Czech Republic since the federation dissolved on 1st January 1993. As for the supply side, the second wave proceeded with 861 companies offered for the privatisation with the total value of CZK 155 bil.

The funds eventually captured 63.5 per cent of all vouchers registered by the holders of investment vouchers. As for the distribution, the top ten IPFs were in a less favourable position, too. These funds acquired 35 per cent of all IPFs' vouchers, which indicates more equal distribution of vouchers among the IPFs. Allocation by the founders shows a higher concentration; Kotrba et al. (1999) calculated that 51.2 per cent of all vouchers entrusted to the IPFs were given to the top ten IPFs' administrators. In all terms, the IPFs were weaker in the second wave.

The second wave represented the termination of the official, centralised component of the voucher privatisation. The result of both waves was that the Czech capital market ended up with over 1.5 thousand new issues of shares worth around CZK 350 bil.[2] After the official part of privatisation, the ownership concentration and general settling down the ownership rights began. It gained a nickname *"the third wave"*. The third wave occurrence was unsurprising. After all, the transfers of shares were expected, and are a natural part of today's capital markets, too.

IPFs in the third wave of the voucher privatisation

The third wave can be summarised as a reallocation of the shares gained during the privatisation. The privatisation was not there to find the final, strategic owners. It was rather a mechanism to find some owners, who would then decide for themselves whether or not they want to retain the ownership. What seems very interesting is that the patterns of the third wave started to show up during the first and second wave already, when the IPFs often used up the concentration limit – they could only hold 20 per cent of a firm's shares.

Egerer (1995, p. 21) writes that the IPFs' predominant activity between end-1992 and mid-1994 was the "portfolio clearing". That is, they sold the shares of companies at which

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[2] The sum of the total value of property that was offered in both waves was CSK 450 bil., out of which CSK 100 bil. was the value of Slovak companies.

they only held a small stake. Their aim was to hold the largest stakes allowed (20 per cent) in fewer firms rather than tiny stakes in lots of firms. Perhaps, that was because they wanted to manage the companies in their portfolio, at least initially. In an interview which was held after the third round of the first wave, two IPF representatives approved they were prepared to conduct their ownership rights actively (CKP, 1992). There are two things to take into consideration when evaluating the initiative. First, active management must had been costly. Note that the joint- stock companies in the Czech Republic were set up in line with the German-type corporate governance model. It means that there are separate management and supervisory boards in the company, each being appointed by the shareholders at the general meeting. This dual board model is characteristic with the management board carrying out day-to-day decisions. That is, playing an active role in the management required possessing information, monitoring the company, screening both the public and non-public information, decision-making etc. And second, active management could not be exceptionally profitable since the IPFs could only charge from their shareholders 2 per cent fee of the fund's value for managing the fund. Evaluating the costs and profits, the case is obvious. Performing active management did not seem to be sustainable in the long run.

The unsustainability of the anticipated IPF's active management was not favourable for the companies that were to be managed. This is because the IPFs got 72 per cent of all investment vouchers in the first wave and 63.5 per cent of all investment vouchers in the second wave (CKP, 1995). Clearly, since the majority of vouchers ended up in the IPFs, the funds held the majority of the companies as a result. Myant (2013) writes that the IPFs were expected to play a role which was unacceptable for the regulated western funds. The companies, in effect, lacked control by either the state or the IPFs. That is, the state withdrew from the companies and did not intend to manage them, and the IPFs were designed so that they manage themselves, i.e. their portfolios, not the companies in the portfolios. However, a second option existed, which consisted of managing the companies dishonestly. In this case, the incentives were inverse – the IPFs needed to control the company actively. Libnar (1993) was concerned about the behaviour of the IPFs' management, i.e. the investment companies that founded and managed the IPFs. The author writes that the economic power which was concentrated in the hands of a few entities was, in some cases, abused by these entities. The undesirable behaviour of the IPFs' managements was earlier described by Anderson (1994). The author was concerned about self-dealing, that is, the IPFs' managers using their control over the fund to enrich themselves. Overall, passing the management to a higher level, i.e. from the companies to the IPFs (and eventually the investment companies), did not automatically imply that the managers would not exercise the same type of behaviour. Or, as Ellerman puts it: *"The funds had an even greater 'corporate governance' problem than do the corporations whose 'corporate governance problem' the funds were supposed to remedy"* (Ellerman, 1999, p. 7).

To sum up, the fact that the investment companies had all the property of "their" fund at their disposal is generally deemed and criticised as the main mistake of not only the voucher privatisation but the entire transformation. As I have argued above, the IPFs were not very much motivated to behave honestly. The opportunities to behave dishonestly were numerous, and those who wanted found the way relatively easily. From the government's point of view, avoiding all possible problems that could occur in a transaction of such a large scope is simply out of the question. What could be achieved was a diminishment of the problematic issues. The ultimate question is, however, whether or not the IPFs were beneficial for the voucher privatisation (read *"for the people who participated by buying the vouchers"*). This can be revealed by econometric modelling; my approach and results are presented in section III.

III.   Measuring the performance of the IPFs

In the previous text, the overall environment within which the investment companies and investment funds operated was explored. The privatisation funds were introduced in a very nonstandard, if not confusing environment. The environment provided opportunities and, as for the IPFs, those who were willing to take it were eventually able to enrich themselves. What must be stressed, however, is that those who were not willing to take the opportunity were in an absolute majority.

The relay now continues with the econometric modelling that supplements what was revealed so far. That is, what I attempt to explore is whether or not tunnelling was a systematic issue. First, I introduce the economic model which follows the design of the IPFs. After that, the data and the econometric strategy are introduced as well. Afterwards, the estimations are presented, and results are discussed. Lastly, the results are generalised, and conclusions are derived.

Economic model of the IPFs' performance

Generally, the performance of a company is only approachable when it is compared with a benchmark entity, preferably with an entity that is similar by design. The benchmark for the comparison is the global index of shares. This is reasonable; an investment fund is virtually nothing but a portfolio of shares of some value, adjusted to the risks of the IPF. The portfolios were a collection of shares of different firms, all of which had to be traded at the Prague Stock Exchange (PSE) by law. Therefore, the global index of the PSE represents a portfolio composed of all possible shares, but not burdened with the risks connected to the IPFs. The global index can be understood as a fund that holds every possible share that is being traded at the stock exchange. It mirrors the risks connected to the respective shares, but not the risks connected to the fund itself.

Using the benchmark index, it is possible to distinguish between the systematic risks present at the whole market, and the individual risks related to the respective entities. Such approach is nothing new in economics; the capital asset pricing model (CAPM) is a well-known and widely used model of financial economics which relates individual assets' returns to the market returns.

CAPM explains the individual asset returns as a function of the whole market's returns (the market portfolio). The asset return is measured relative to the opportunity costs. As for the opportunity costs, it is the return of a riskless asset – a chosen interest rate. The difference between the return of the individual asset (the asset return) and the opportunity costs (the interest rate) is the risk premium. That is, the risk premium is what the investor obtains for undertaking the specific risk connected to the individual asset. This specific risk is not present in the whole economic environment. What the CAPM assumes is that this risk premium is proportional to the market premium. The market premium is designed in the same way as the risk premium; as a difference between the benchmark rate of return and the riskless asset. That is, the risks are divisible into two kinds: the specific risk manifested in the risk premium, and the systematic risk represented by the market premium. The model is written as:

$$E(R_i) - E(R_0) = \beta_i \times [E(R_m) - E(R_0)] \tag{1}$$

where $E(R_I)$ represents the expected return of investment asset i, $E(R_0)$ is the expected return of the riskless asset (i.e., the opportunity cost), $E(R_m)$ is the expected benchmark return, and β_I is the measure of the risk of the investment asset i. Therefore, the equation (1) summarises what was explained above; the risk premium of asset i is equal to the market premium adjusted for the risks.

Data used for the modelling

The economic model explains the risk premium of an IPF with the risk premium of the whole market. Therefore, as results from the design of the model, three variables in total are needed; the prices of the funds, the benchmark index of share prices, and the riskless asset, i.e., some market interest rate.

As for the IPF prices, it was stated above that there were 429 IPFs that attended the first wave, and 349 funds that attended the second wave. Out of these, 164 first-wave funds were Slovak and I, therefore, do not consider them in the context of the third wave. Some funds merged and therefore left the market, and some were never publicly traded and there is thus no record on their market prices. All in all, I do not have data for all 479 Czech funds. What I do have is daily data of 149 individual funds,[3] within the period between 26th October 1993 and 31st December 1999. Out of these, 27 IPFs are those that were suspected and eventually found guilty of the fraudulent activities. All IPFs' data were obtained from the website kurzy.cz (2019).

The model requires the returns of the investment assets (the IPFs' shares). The data, therefore, need to be converted into per cent changes. The return of an ith investment asset, $r_{\{i,t\}}$ in time t is defined as the percent changes of the asset's prices $p_{\{i,t\}}$, that is, $r_{\{i,t\}} = (p_{\{i,t\}} - p_{\{i,t-1\}})/p_{\{i,t-1\}}$. As for the benchmark share index, I use the PX-glob which is the global index of shares traded at the PSE. The index is available on the PSE websites (BCPP, 2019). The market return $r_{\{m_t\}}$ which is used for the modelling is defined

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[3] The total number of funds plays no role in the discussion; it is only to illustrate the scope of the business which I deal with in detail.

as $r_{\{m_t\}} = m_{\{t\}} - m_{\{t-1\}}/m_{\{t-1\}}$, where $m_{\{t\}}$ stands for the PX-glob in time t. Lastly, the market interest rate I use as the opportunity cost is the Prague interbank offered rate (PRIBOR). The rate was obtained from the CNB websites (CNB, 2019), and it is in per cent already, i.e. there is no transformation needed. It represents the opportunity cost, $r_{\{0_t\}}$. Subtraction of the interest rate from the two variables leaves us with the risk premium and the market premium. The variables are used in per cent changes, that is $(r_{\{i,t\}} - r_{\{0_t\}}) \times 100$, and $(r_{\{m_t\}} - r_{\{0_t\}}) \times 100$.

Econometric approach to the IPFs performance

In the previous subchapter, I developed the economic model that explains the expected behaviour of the share prices of the IPFs. In this section, I briefly introduce the econometric model and the method used for its estimation. The equation to be estimated is the equation (1) with the added constant and error terms, and with the variables that are used for the modelling. That is:

$$r_{\{i,t\}} - r_{\{0_t\}} = \alpha_i + \beta_i \times (r_{\{m_t\}} - r_{\{0_t\}}) + \varepsilon_{\{i,t\}} \tag{2}$$

where α is the constant term, β_i is the measurement of the sensitivity of the investment asset i to the variability of the market, and $\varepsilon_{\{i,t\}}$ is the regression error term. The equation (2) follows the idea of the risk premium as was defined above. This leads to the assumption that the constant term should be statistically insignificant from zero (formally $H_0 : \alpha_i = 0$).

After the basic identification of the model, I proceed to what is most interesting, that is, to the identification of the structural breaks in the data. The structural break is estimated with the standard Chow test for structural breaks, and the estimated break is used in two equations. First, the equation (3) expects the break to influence the parameter β_i, i.e. the specific risk. And second, the equation (4) includes a standard dummy variable, which means the break is to affect the parameter α_i.

$$r_{\{i,t\}} - r_{\{0_t\}} = \alpha_i + \beta_i \times (r_{\{m_t\}} - r_{\{0_t\}}) + \delta_i d \times (r_{\{m_t\}} - r_{\{0_t\}}) + \varepsilon_{\{i,t\}} \tag{3}$$

$$r_{\{i,t\}} - r_{\{0_t\}} = \alpha_i + \beta_i \times (r_{\{m_t\}} - r_{\{0_t\}}) + \delta_i d + \varepsilon_{\{i,t\}} \tag{4}$$

where $d = 0$ before the break, and $d = 1$ otherwise.

Multiplying the variable for the market premium in equation (3) by the dummy variable introduces a very useful feature to the model. That is, the parameter δ_i is, in fact, an addition to the parameter β_i for the observations after the break. It means that the parameter accounts for the change in the measurement of the asset's sensitivity to the market volatility. In other words, the equation (3) is the same as the equation (2) for the observations before the break. After the break, however, another dimension of the variable for the market risks is added to the model. This specification allows for additive adjustment of the parameter β_i. The second specification, on the other hand, allows for additive adjustment of the parameter α_i – the constant term. Overall, the equation (3) assumes a structural change in the volatility. The equation (4) assumes a structural change in the levels.

All models are estimated using standard OLS regressions. Tests for heteroskedasticity and serial correlation are performed too, as well as normality of the standard errors. All tests are on five per cent significance level, i.e. $\alpha = 0.05$, unless stated otherwise.
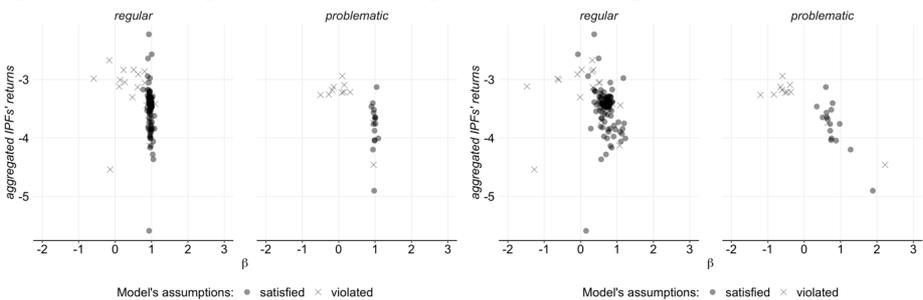
Results

Employing the above-described model, data, and methodology, the estimations were made, and the results are presented in Figures 1 and 2. As for the groups the results are divided into, the problematic funds are those that were connected to the questionable activities and tunnelling. That is, the problematic funds are the 27 suspicious IPFs that I mentioned above. The remaining IPFs were not at any time discussed to be defrauded, which are to be taken as that they were not tunnelled. Note that the odds that the problematic funds would not satisfy the model's assumptions were high; 40 per cent of these funds violated the assumptions, which means that their prices did not mirror the market but rather the problems in the IPF. To compare, only 15 per cent of the non-problematic funds are among those which violated the model assumptions.

Figure 1: Estimated parameters α before (panel a), and after (panel b) the structural break
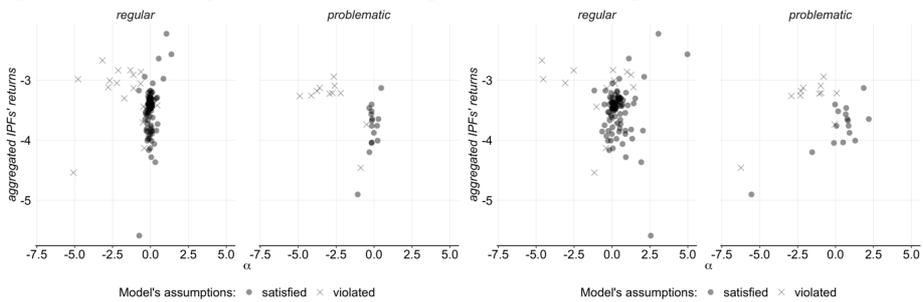
Source: author's own computations

Figure 2: Estimated parameters β before (panel a), and after (panel b) the structural break

Source: author's own computations

What all results have in common is that most of the structural breaks were recorded in the year 1998, which is the year of important amendments in the legislature that addressed the problems with the IPFs. Apparently, after the break, the parameters α_i gained in value,

which means that the mean of the IPFs' premia rose. That is, the IPFs were, perhaps, more trusted after the changes in the legislation, which resulted in their higher evaluation. This conclusion is in hand with testing the structural breaks in volatility as it got lower after the breaks. However, two problematic funds that obviously differ from what all the other IPFs' results show. These two funds got significantly discounted after the break, and their volatility rose two-fold. Unsurprisingly, these were the most problematic funds in the voucher privatisation – the C.S. Funds. The remaining funds, in general, followed the market development.

Generally speaking, testing the CAPM theory on the sample of 149 individual funds showed that for most of the funds, the theory provides a good explanation of what was the issue at the Czech capital market of investment funds in the 1990s. For the majority of the funds in my sample, the assumptions hold. The slope was not significantly different from one, which bears witness to the claim that the returns of a majority of the funds were driven by the systematic risks, i.e. by the environment at the Czech capital market. What the funds did, well in line with what is standardly expected from the collective investment, was that they diversified the risks of individual investments. Moreover, for most of the funds, the changes of the legislature, and the overall environment at the market, resulted in structural changes that were favourable. The volatility of the funds' prices lowered, i.e. the risks lowered, and their constant terms rose, i.e. the discounts were smaller. Generally speaking, the privatisation funds were subjects to the situation at the market since what they were composed of was nothing else but the shares that were traded at the market. The tunnelling was not a symptomatic phenomenon of the privatisation. The IPFs were influenced by the market which was peculiar because unmatured. Tunnelling was rather an exception, not a rule.

IV.   Conclusion

The main conclusion is that after the privatisation, the IPFs did not perform worse than the market. As for the funds' opportunities, each fund concentrated more property than any individual holder of investment vouchers could, which resulted in the funds being tempted to abuse their power. An absolute majority of the fund did not do it. What I revealed was that the tunnelling was not a phenomenon that would be symptomatic for the privatisation funds. Therefore, the conclusion is that despite the general belief that "all funds were tunnelled", they were not. Thus, the privatisation funds were not a failure in this sense.

The empirical results support my argument. A majority of the funds corresponded to the market. That is, a majority of the funds diversified the risks as much as the risks connected to specific investments were reduced to the risks that were unavoidable for the market as a whole. A significant exception was recorded for the C.S. Funds, which were identified as the main problem not only by the model but during the privatisation already. The investment privatisation funds, in general, were not a failure. So was not the voucher privatisation, which is often accused of making the tunnelling viable.

Acknowledgements

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