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Privatization as a Means to Societal Transformation: An Empirical Study of Privatization in Central and Eastern Europe and the Former Soviet Union

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Summary

There have been numerous empirical studies of privatization programs, which have found efficiency gains to firms, industries, and financial markets in a multitude of developed and developing economies. Central and Eastern Europe and the Former Soviet Union are conspicuously and consistently absent from these studies. Some reasons for this include the lack of reliable and consistent firm data both before and after privatization, the absence of vital business mechanisms and institutions to distribute reliable business information, and misconceptions about what privatization actually is. Given these problems, Stiglitz (1998) offers an interesting solution for measuring the "success" privatization in CEE and FSU. Stiglitz (1998) provides six factors to be considered when assessing the impact of any type of economic reform: economic growth, health, education, infrastructure, knowledge, and capacity-building. Through correlation analysis, financial, economic and social variables representing these six dimensions are reduced to fourteen key variables that describe privatization / economic reform success.

A series of mean analyses are performed, taking into consideration privatization program characteristics and control variables to account for other economic reforms that have occurred simultaneously with privatization. General findings suggest that overall there is positive economic, financial, and social growth after privatization. However, it is difficult to discern the effects of privatization, from the effects of other economic reforms. In addition, countries that have manager/employee privatization do not have sale privatization as part of their programs experience negative growth in market capitalization, value of stocks traded, and official development assistance.

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Introduction

This research measures discernible effects, if any, of the privatization programs in the transition economies in Central and Eastern Europe and the Former Soviet Union. It intends to do this by classifying privatization in these economies as an economic reform, or as means to societal transformation, and measuring its success by the criteria given by Stiglitz (1998)[2]. This new perspective on privatization success requires different methods and data than those used to measure the effectiveness of privatization in the past.

In order to measure privatization success in terms of its ability to transform society, six different aspects of a nation's situation will be analyzed to ascertain which factors influence successful privatization, or in other words, successful economic reform. Stiglitz (1998) introduced six areas as part of a new paradigm for measuring the success of economic development: economic conditions, health, education, infrastructure, knowledge, and capacity- building.

Fifty-five variables[3] are compiled that describe the six aspects of economic reform, or privatization "success." Through correlation analysis, the original variables are reduced to fourteen variables. These variables are as follows: black markets[4], regulation[5], fertility rate, Gross Domestic Product (GDP), market capitalization, mobile phones, mortality rate under five years, official development assistance, radios, goods transported by road, percentage of paved roads, valued of traded stocks, telephone lines,

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[2] Stiglitz, Joseph, 19 October 1998, "Towards a New Paradigm for Development: Strategies, Policies, and Processes," Prebisch Lecture at UNCTAD, Geneva.

[3] See Appendix A for a list of these variables.

[4] The "black markets" measure is from the Indices for Economic Freedom published by the Heritage Foundation and the Wall Street Journal.

[5] The "regulation" measure is from the Indices for Economic Freedom published by the Heritage Foundation and the Wall Street Journal.

and waiting time for a telephone[6]. For twenty-two of the twenty-six countries[7] in CEE and FSU, changes in these success variables are calculated for the three years after privatization.

Mean analyses are conducted using these "change" calculations to determine the effects of different aspects of a privatization program on the success variables. The characteristics of a privatization program that are considered include privatization type, and whether or not privatization laws had been enacted at the time privatization was implemented in the country in question. The types of privatization considered in the analysis involve mass privatization, privatization through sales, manager/employee privatization, and privatization that includes privatization investment funds.

In addition, four "control" variables, that represent other "shock therapy" economic reforms implemented in tandem with privatization, are analyzed, to determine whether or not the post-privatization changes can be attributed to privatization, or other economic reforms. The types of controls that are considered include wage and price controls, liberalization of trade, the facilitation of capital flows, and decreases in fiscal spending. Different combinations of privatization type, presence of privatization law, and controls are used, two at a time because of the number of countries in the sample, to design an experiment that describes the mean changes in success variables the three years after privatization in these transition economies.

The mean analyses find that in all cases, the effect of any particular type of privatization on the fourteen success variables are hard to discern from those of economic

[6] The other 12 variables are from *World Development Indicators 2000*, a data set published by the World Bank.

[7] Bosnia-Herzegovina, Croatia, Macedonia, and Turkmenistan were not included in the analysis because either the recent start of their privatization programs (Bosnia-Herzegovina and Croatia), or a lack

reform as a whole. Although the positive effects of privatization do not appear to be recognizable, there are two types of privatization that appear to be an integral part of economic reform performance. The absence of sale privatization[8], and the presence of manager/ employee privatization in a country's privatization program, does appear to have negative affects on market capitalization, official development aid, and the value of stocks traded.

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of data available (Macedonia and Turkmenistan).

[8] Sale privatization, for the purposes of this paper, is privatization through asset sales or through the sale of shares.

Literature Review

A new and unexpected twist in economic history presented itself with the fall of the Berlin Wall in November 1989. By October 1990, the Federal Republic of Germany and the German Democratic Republic had reunited, and by Christmas, 1990, the Soviet Union had disintegrated into a number of independent nations and the Commonwealth of Independent States (CIS) was formed. These newly independent nations were in economic disarray and needed drastic reforms in order to prevent economic and social collapse.

Economic scholars, historians and practitioners all had a puzzle to solve. The communist economic structures of these countries had failed. These economies were all driven by a focus on production rather than on market forces and consumer demand. This focus led to what was dubbed the "shortage economies[9]" of CEE and FSU. Food supplies were down, production was at a virtual standstill, unemployment was growing, the currencies were depreciating and inflation was soaring. The primary challenge to reformers was to change the focus of these economies from a production to a market orientation. Another problem these "transitional" economies were facing was their respective outstanding loan obligation to the West. CEE and FSU needed to find a way to raise the hard currency necessary to meet these obligations. The solution, it seemed, was to do what was done in Latin America during its economic crises in the early 1980s. A Central and Eastern European form of "shock therapy" was recommended.[10] The freeing of prices, convertibility of currencies, allowances for free trade and the divestiture

[9] Yergin and Stanislaw, pg. 271.

[10] Jeffrey Sachs, who designed the shock therapy program in Bolivia, also advised the Polish government on how to implement shock therapy reforms in Poland. (Yergin and Stanislaw, pg. 270-271.) The shock therapy reforms implemented in Poland spread across CEE and FSU as a means to achieve

of government assets, or "privatization," were all part of the "shock therapy" for Central and Eastern Europe.

Shock therapy in CEE and FSU can best be described by the Polish designation for it, "market revolution."[11] The market revolution of CEE and FSU involved many of the same reforms included in the "shock therapy" programs in Latin America. These included restrictive monetary policies, drastic reduction in government deficits, wage controls and tax reform. Despite many economic reforms, the rapid devaluation of currencies and the offsetting increase in money in circulation resulted in severe hyperinflation in CEE and FSU. The hyperinflationary conditions exacerbated the economic hardship experienced by the populaces, and resulted, in some cases, in re-imposing government control over prices and exchange rates.[12] In some cases, especially in Russia, the collapse of the social system also forced the government to act to re-implement controls over some productive factors of the economy.

However, in CEE and FSU, there were many more SOEs than in Latin America. Additionally, unlike in Latin America, there was not even the most primitive institutional backbone in many of these countries to support any type of business or financial transactions.[13] For privatization to commence, financial and legal systems had to be created simultaneously as firms were being released from government control. In addition, an important consideration that needed to be made in CEE and FSU that did not need to be addressed in Latin America was the social infrastructure implications of privatization. Most social services, including housing, foodstuffs, education, and medical

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economic reform in these regions.

[11] Yergin and Stanislaw, pg. 271.

[12] This is especially true for Russia.

[13] One of the exceptions is Poland. In Poland, the Commercial Law of 1934 had never been repealed

services, were provided through the SOEs in CEE and FSU. The privatization of these SOEs meant the de facto dissolution of these social services, without necessarily any other institution to take control or fund these services. In very low-income economies like those that exist in CEE and FSU, where services were once provided and then were not, the societal impact was devastating. These devastating social effects had significant negative impacts on the economies in question.

The sheer number of SOEs that required restructuring and privatization in a short period of time (25,000 enterprises in Russia alone) started the debate of rapid reform versus gradual reform.[14] Countries like Poland and Hungary preferred a slower rate of privatization versus countries like the Czech Republic and Russia, which preferred a program of speedy privatization, called "mass privatization."

Other considerations that had to be made when implementing the privatization programs in CEE and FSU involved the restructuring of unprofitable firms, the creation of corporate governance mechanisms, and information availability about companies and the market. In CEE and FSU, unlike during the implementation of any other privatization program anywhere in the world, privatization was occurring in a vacuum. There was no preexisting private sector before privatization. All the players necessary for the function of the private sector were being simultaneously created. In CEE and FSU, privatization had the responsibility of not just selling shares to the market, but creating the market itself. The proposed solution to these many problems was presented in the guise of voucher privatization, or mass privatization.

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in Poland. With the change of government, this law was again enforced.

[14] In Russia alone, it was thought if gradual, case-by-case privatization took place, all SOEs that needed to be privatized would not be until the 21st century. If this were the case, then any benefits to be

Mass Privatization

The reason mass privatization programs were implemented in CEE and FSU, was that there were so many SOEs to be privatized that it would have "taken a hundred years" to privatize all these firms in a case-by-case fashion.[15] Meanwhile, as firms were slowly privatized, the ones that had not been privatized would stagnate and totally deteriorate before they could be privatized.

Voucher privatization is privatization where government-issued securities, or vouchers[16], are used as the primary form of payment in the purchase of state-owned assets and SOEs. The respective Central and Eastern European governments distribute vouchers to their respective populations at minimal or no cost. These vouchers can be denominated in either local currency or points,[17] which can be very important when it comes to the formation of a voucher market. Privatization auctions are then held throughout the country, where vouchers are used to bid on shares of state owned enterprises. Voucher privatization allows for many SOEs to be privatized at once instead of on a case-by-case basis, as is done in most other privatization programs. This was considered to be particularly important in Central and Eastern Europe, where tens of thousands of firms had to be privatized at once.

At the privatization auctions, vouchers were then used to bid for shares of an SOE. Auction officials would count the total number of vouchers submitted, compare

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obtained from privatization would be lost. (Boycko, Shliefer, and Vishny, 1995)

[15] Boycko, Shleifer, and Vishny, (1994, 1995).

[16] Privatization vouchers are also referred to as privatization "cheques", "certificates", or "pais", depending on the country that is implementing the privatization program.

[17] The countries that use currency to price their vouchers are as follows: Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Bulgaria, Estonia, Georgia, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Poland, Romania, Russian Federation, Slovenia, Tajikistan, and the Ukraine. The countries that used points to price their vouchers include: Croatia, Czech Republic, and the Slovak Republic. Hungary, Macedonia, Tajikistan, Turkmenistan, and Uzbekistan did not implement mass

them with the number of shares to be issued, and then determine a voucher/share ratio. If the vouchers were priced in currency, the voucher/share ratio would be used to distribute shares and to value the company. For instance, if three million vouchers were submitted to buy an SOE, and there were only one million shares to be distributed, the voucher per share ratio would equal 3. If an investor submitted 300,000 vouchers, they would be issued 100,000 shares, and own 10% of the newly privatized enterprise.

The primary theoretical basis for mass privatization is based in "State vs. market" theory. Mass privatization is based on the premise that the State can not manage assets in an efficient way. Therefore, selling these assets to the private sector as quickly as possible will remove the inefficient State management and replace it with private sector owners who will have a personal stake in the success of the firm. The new owners will have the incentives to manage the firms effectively in order to increase their personal wealth. In order to increase personal wealth, the owners will look for possible growth opportunities within an economy. These owners will also serve in a governance capacity, and make sure the managers (if they are not already the managers) make operational and financial decisions to increase the value of the firm. Also, the owners will have better knowledge than the State about demand for their firms' products and services, and will be better able to allocate firm assets efficiently to fulfill market demand.

The impetus behind mass privatization is political in scope. Wide distribution of shares and speedy privatization are political goals instead of economic ones. These goals of mass privatization actually conflict with many long-term economic goals of privatization. If the main concern of privatization is to remove an SOE from State-influence as quickly as possible, and as "fairly" as possible, no consideration is being

privatization programs, so no vouchers were issued.

made for the vital institutions that must be in place before successful privatization can take place. Van Hayek asserts that even though centralized planning is not the answer to economic growth, true "laissez-faire" capitalism is not the answer either. Van Hayek stated that "a carefully thought out legal framework is necessary for competition to work beneficially"- competition being the hallmark for efficient asset allocation.[18] Many of the privatization programs in CEE were implemented with old socialist ideas of "fairness" in mind, and ignored that a beneficial market economy must have the institutions and infrastructure in place to keep it "in check."

Another premise of mass privatization is that if enough firms are privatized quickly, a "critical mass" of firms in the private sector will lead to the development of institutions necessary to form a market economy.[19] This critical mass theory has the premise that a market can develop simultaneously with market institutions. Once a large enough number of firms is in the private sector, then private sector market institutions will develop to fulfill financial and information distribution needs of the private sector. However, this assumes that a market can form without the information required and without the "rules of the game" established to make it a market. Without rules established and mechanisms in place to relay reliable information, every firm in a particular market functions in a vacuum of sorts. If firms are in a vacuum, and are not accustomed to participating in a "market," then it will be very difficult to convince the firms to participate in the market and to defer to market institutions after the fact. This is why it is so important for governments in former command economies to create preliminary market institutions and rules before privatization starts. These institutions

[18] Skidelsky, (1996).
[19] Goldstein and Gultekin, (1997).

establish the "rules of the game" in terms of disclosure of firm information, incentives, and the parameters to measure firm growth and value.

Some of the earliest mass privatization programs transpired in Russia from 1992-1994, and in the Czech Republic from 1992-1996. There were two waves to the Czech Republic's voucher privatization program. The first wave started in 1992, and the second wave started in 1994. Harper (1999a) compares the profitability and operating efficiency of 178 Czech firms privatized in the first wave before and after privatization. The author finds that efficiency and profitability decreased immediately after privatization. Non-manufacturing firms have less negative results than manufacturing firms.[20] This could be the result of the extensive over-employment which took place in the manufacturing sector relative to the service sector, so in order to correct this situation, the measures required are more drastic (especially in terms of employment) in the manufacturing sector as compared to the service sector. Also, the process of restructuring manufacturing firms may take longer, and hence the profitability and efficiency of these firms would take longer to improve. In another study, Harper (1999b) finds that the performance of firms privatized in the first wave performed worse than firms privatized in the second wave of the Czech Republic's privatization program. Overall, there are positive effects on profitability and efficiency from privatization. The author believes that the results are consistent with the hypothesis that stable political and economic environments lead to better firm restructuring and better operational performance. In addition, the author's results are consistent with the hypothesis that firms with longer privatization preparation periods, or "implicit seasoning," actually have better operating performance post

[20] Harper, Joel, 1999, *Short-Term Effects of Privatization on Operating Performance in the Czech Republic*, Working Paper.

privatization. This "implicit seasoning" hints to the fact that firms that have the opportunity to defensively restructure before privatization, as opposed to after privatization, have a better chance of being a successful privatization than if they wait to defensively restructure after privatization, which many firms in the first wave of privatization were forced to do.

Claessens and Djankov (1997) document changes in financing, employment and operating efficiency in approximately 6,300 manufacturing enterprises in seven Central and Eastern European countries (Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic and Slovenia). The authors find evidence of significant improvements in total factor productivity and reductions in excess employment.

Barberis, Boycko, Shleifer, and Tsukanova (1996) examine 452 Russian shops privatized between 1992 and 1993 and find that the presence of new managers and owners actually promotes restructuring in these shops, and that equity incentives to old managers does not promote restructuring. This lends support to what was found with the privatization of larger enterprises in CEE and FSU, that privatization through manager/employee privatization results in very little incentive to change the way the newly privatized firm is managed.[21] New managers usually bring with them strong incentives and fresh ideas on how to manage the newly privatized enterprise more efficiently.

Goldstein (1997) uses financial intermediation literature to explain the relative success of the Czech privatization program compared with the utter failure of the Albanian program. The privatization funds created in the Czech Republic provided the

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[21] John Nellis, "Time to Rethink Privatization in Transition Economies?" Discussion Paper No. 38, International Finance Corporation, (Washington, D.C.: World Bank).

monitoring required in preventing the Ponzi schemes that occurred in Albania. The author stresses the importance of regulation, monitoring and enforcement of security trading in economies-in-transition. However, these countries do not necessarily have the regulatory and legal network in place to prevent various forms of fraud associated with privatization. This study shows the further need to establish privatization programs that will lead to long-term institution building, and hence to better economic reform. The institutions that privatization programs should help to put in place allow for the more reliable collection and dissemination of information to financial markets. This improved availability of information can then lead to better-informed investment decisions by domestic investors, as well as more interest by foreign investors in investment opportunities.

Aggarwal and Harper (1998) study the equity valuation process in the Czech privatization voucher auction and find the “price discovery process” in the Czech privatization auction results in efficient pricing of privatized shares and equitable distribution of enterprise shares. This again portrays privatization as a mechanism through which better financial information can be distributed throughout an economy, and the efficiencies associated with this new dissemination of information. Not only can a privatization program, through the institutions it creates, lead to better dissemination of information, but also through the way newly privatized shares are sold, can a privatization program relay reliable financial information (stock price) to the economy at large.

Although privatization in Central and Eastern Europe, and the Former Soviet Union has been studied quite extensively, most of these scholarly works either tell the story of voucher privatization in individual countries[22], provide some sort of story of how privatization was done in one country, or provide "how to" or "what should happen" goals of privatization in transition economies[23], or the debate of "firm restructuring vs. firm privatization; what should come first?[24] None of these studies cut to the quick of the question that puzzles us concerning privatization in Central and Eastern Europe and the Former Soviet Union: Did the economic experiment work? Are these programs a success? Did voucher privatization, and the privatization programs that followed in CEE and FSU, deliver what they promised? Are the firms stronger competitors, have they restructured? Is economic and social prosperity at hand?

The only answer to these questions is yes and no. Some countries in Central and Eastern Europe are doing better, but were at first thought to be "failures," such as Poland. The Czech Republic is exactly the opposite, its privatization program was at first deemed to be a raging success, but now the economic situation of the country is not good. For countries like Russia and especially Albania, the privatization programs have always had problems, and the resulting economic situations in these countries are dire. In Hungary, the privatization program, at its implementation, was deemed successful, and the Hungarian economy is doing well enough to apply for European Currency Union membership.

Privatization through Sales (Sale privatization)

Another form of privatization is selling firms for cash to foreign individuals or enterprises or to wealthy individuals and oligarchs with a country. Although this

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[22] Maxim Boycko, Andrei Shleifer, and Robert Vishny, "Voucher Privatization," Journal of Financial Economics 35, 1994, 249-266.

[23] Goldstein and Gultekin, (1998).

[24] Lalith Goonitilake, Roman Wojtasz, and Peter Chuddy, "Enterprise Restructuring in Transition

procedure provides hard currency revenues for governments desperately in need of money, acquisitions by foreigners or wealthy oligarchs can be politically unpopular, particularly when there is a perception that full value was not paid to acquire the assets.

Instead of selling the entire firm or its assets for cash, shares in the firm (all or part) can be sold for cash. This is the SIP method referred to earlier. However this Initial Public Offering (IPO) method of privatization works best only when there is a functioning financial market, and a demand for the privatized shares exists. For this reason, the early stage privatization programs in CEE and FSU did not use this method. Only after financial markets and information distribution systems in these transition economies have adequately developed does the SIP method of privatization become feasible.

Manager/Employee Privatization

In much of CEE and FSU, one of the most popular ways to privatize SOEs is to transfer ownership through shares to the managers and employees of the enterprise in question. This is an interesting occurrence in CEE and FSU because it was promoted by Western advocates of ESOP (employee share ownership plans) plans as a means of erecting the proper incentives for manager/owners. However, in CEE and FSU, this form of privatization did not usually lead to the desired "incentive-based" initiative by managers to restructure and improve the firm. In many cases, Manager/Employee Privatization (MEP) led to a "business as usual" stance by the managers, and in some cases, to spontaneous privatization.[25] Another problem with MEP is that not all managers and employees can benefit from the privatization of their firm. Depending on

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Economies – The Polish Experience," A United Nations Devleopment Organization project. (1998).

political constraints, some managers and employees who work for politically sensitive firms (defense, high technology), are not able to participate in the privatization of their firms because the firms are not slated to be privatized. If someone works for a company that is ineligible for privatization, that person has no way to increase wealth by participating in the restructuring and revitalization of his or her employer. This benefit, theoretically, could accrue to a neighbor that works for a company being privatized. Is it fair to give one person the means to increase wealth while the opportunity is denied to the other, particularly when that place of employment was mandated? The fairness of this form of privatization is questionable at best.

Contrarily, MEBOs in the developed world tend to produce the opposite results. Kaplan (1989) and Smith (1990) find that improved operations in firms that have experience MBOs are due to improved incentives rather than through layoffs of workers or the "managerial exploitation of shareholders." In CEE and FSU it has been found that even though workers may sometimes be dismissed, in other cases, privatization laws prohibit the firing of redundant workers. Also, when spontaneous privatization takes place, it is the epitome of managerial exploitation of shareholders, who just happen to be workers at the enterprise in question.[26] In many cases, there is no "market" for the privatized shares where the employees can sell these shares for a fair price. Instead, the employees are at the mercy of management to buy their shares for an arbitrary price that does not reflect their true intrinsic value.

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[25] World Development Report 1996: From Plan to Market, (Washington, D.C.: World Bank 1996). O. Blanchard and P. Anghion, 1996, "On Insider Privatization," European Economic Review, 40, 759-766.

[26] Igor Filatochev, Ken Starkey and Mike Wright, 1994, "The Ethical Challenge of Management Buy-Outs as a Form of Privatization in Central and Eastern Europe, Journal of Business Ethics, 13, 523-532.

In some countries as well, the mandated underpricing of shares that are to be distributed to managers and employees encourage the MEBO.[27] Since many of the SOEs sold by the State are unprofitable, and the State is aware of this, an article by Ben-Ner and Jun in 1996 seems somewhat to explain why this underpricing may happen. Although the State is making this as a purely political decision in order to be seen as distributing wealth to the population, Ben-Ner and Jun found that in a market economy, owners of "relatively unprofitable firms will sell out for low prices." This is true in CEE and FSU. Many of the SOEs in this region are unprofitable and unwieldy after years of State management. These SOEs are sold for government-issued vouchers that cost the holders little or no money. Therefore, the governments who implemented these mass privatization programs are not just selling the enterprises for "low prices," but giving them away. In addition, it was found that the "probability of an employee buyout decreases with the employees' outside options and increases with owners' outside options." In CEE and FSU, this finding also appears to hold. Although it might seem that employees have multiple outside options in terms of investment opportunities, this perception is not true. In addition, although it may seem that the State does not have many opportunities to privatize quickly, it does. Managers and employees may perceive buying their company as the only way of ensuring that they remain employed. It may be perceived that if the government privatizes the company in any other way, through privatization auction, or a sale of some sort, that changes will be made and people will be laid off. The government, however, has many different options on how to proceed with privatization, including privatization auctions, sale of the firm or firm assets, debt/equity

[27] Boycko, Shliefer, and Vishny, pgs. 76-81.

swaps, and so on. The government often would just prefer to hand it over to the managers and employees because it is quicker, and is perceived as fairer.

In the West, it has been shown that inside information, contrary to popular belief and anecdotal evidence, is not the primary motivator behind management buy-outs.[28] Although empirically there is some evidence to show that managers do use their informational advantage when making personal investment decisions and implementing a common stock repurchase[29], using this same inside information for management buy-outs is different. Management buy-outs are very closely scrutinized and regulated by the Securities and Exchange Commission (SEC).[30] The "disclosure requirements and the high probability of litigation by shareholders" tend to keep managers "in check" regarding doing anything that may seem improper.[31] In CEE and FSU, it appears the opposite is true.

There were so many SOEs to privatize, in so little time, and there were usually no institutional mechanisms to distribute company information in any reliable way, so in many cases, managers and employees were the only parties who knew anything about a soon-to-be-privatized firm. In addition, the government actually encouraged Manager/Employee privatization to facilitate the speedy privatization of SOEs. Special incentives were given to managers and employees who wanted to buy shares in their respective firms. Managers and employees who bought shares in their enterprises also saw this action as a form of "unemployment insurance." The logic behind this is if they own the firm, they cannot get fired, and their future employment and benefits are assured.

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[28] D. Scott Lee, 1992, "Management Buy-Out Proposals and Inside Information," Journal of Finance, Vol. 48, No. 3, July, 1061-1079.

[29] Larry Dann, Ronald Masulis, and David Mayers, September 1991, "Repurchase Tender Offers and Earnings Information," Journal of Accounting & Economics, Vol. 14, Iss. 3, 217-252.

Their primary relationship with the company is through their job and its salary, housing, education, health care, and other benefits. Their preoccupation is with safety – preserve their positions – and they think that being an owner will enhance this protection.

In addition, the occurrence of spontaneous privatization, where managers "steal" corporate assets to use in their own private ventures clearly shows that insider information is being used and acted upon by those in the best position to understand the implications of the inside information. This activity is to the detriment of outside shareholders (if there are any) and employees of the enterprise who either do not have the information about the valuable assets or who do not appreciate its significance. Again, the lack of any reliable mechanism to distribute reliable information about firms, along with the implementation of corporate reform and privatization in a regulatory and legal vacuum, leads to insider abuses in some cases. This type of situation very rarely occurs in the West because of its advanced financial institutional development, which allows the distribution of reliable information, accompanied by a well-developed regulatory and legal system.

Although there is "concentrated ownership" in the hands of the managers through M/EP, which should lead to defensive restructuring, and eventually strategic restructuring, these managers, according to Nellis (1999), often lack the "incentives, skills, and resources to manage" their respective firms well. Pohl, et al. (1997) and Goldstein (1997) suggest that in order for successful privatization and restructuring to commence, there needs to be a governance mechanism, usually in the form of a privatization fund, to check the actions of managers, and also a governmental structure to

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[30] Securities and Exchange Commissioner Joseph A. Grundfest, quote from the Internet in 2001.
[31] Grundfest, 2001.

regulate the actions of the funds.

According to Shleifer and Vishny, (1986), if there is a mechanism in place to concentrate ownership and increase corporate governance, then firm value should increase and be reflected in stock price. Classens (1997) finds empirical proof of this assertion when studying the Czech privatization program. When individual investors or (non-bank sponsored) investment funds in this privatization program bought a large number of voucher points from investors, and bought a large portion of a soon to be privatized SOE, the voucher price of the newly privatized enterprise was higher than other comparable firms that were not acquired by an individual investor or (non-bank sponsored) investment fund. The initial voucher prices for firms where a relatively large amount of the stock was bought by a bank-sponsored investment fund are lower, and then increase over time. Since banks were still under the influence of the State at the time of privatization, this may have indicated an initial perceived conflict of interest.

MEPs that occur in CEE and FSU primarily facilitate the speedy privatization of many SOEs. However, by allowing, and even encouraging in some cases, MEPs, the State may sacrifice the efficiency objective of privatization in order to privatize quickly.[32] There are already doubts about the success of privatization in CEE and FSU, because the diffuse ownership of shares that is often created through voucher privatization creates a definite problem between ownership and control. Demsetz and Lehn (1985) suggested that this is a problem with diffuse ownership of shares. If the ownership of shares is too diverse, there is not an owner willing to come forward to make her wishes known because it is too costly and she does not own enough of the stock to make it worth her

[32] Mike Wright, Igor Filatotchev, Trevor Buck and Ken Robbie, 1994, “Accountability and Efficiency in Buy-Outs in Central and Eastern Europe,” Financial Accountability and Management, Vol.

while. Also, she is afraid of the "free-riding" effect and does not want other stockholders to have equal benefit from her efforts. Therefore, the owners may "own" the firm, but the managers "control" the firm unchecked. However, empirically Demsetz and Lehn (1985) found no significant relationship between ownership concentration and accounting profit. The result by Demsetz and Lehn conflicts with the Berle-Means (1933) thesis, which hypothesizes that diffuse ownership adversely affect corporate performance. The Berle-Means hypothesis more precisely explains the situation in CEE and FSU.

Distribution of Shares

Once the enterprise is corporatized, how the newly created shares are distributed is just as important as the method chosen for privatization. How privatized shares are distributed determines how well the firm will be restructured, and hence, how well it will be able to compete in the new market economies of CEE and FSU. If the shares in a newly privatized enterprise are distributed in a way that creates a concentrated ownership structure with an oversight mechanism, then the improved operational and financial efficiencies desired from privatization will most likely be achieved.[33]

Shares can be distributed via the privatization program to individual investors. This was the original intent of many privatization programs in CEE and FSU. However, as mentioned previously, if the distribution of shares is too widely dispersed, the absence of a means for concentrated ownership means that there is really no benefit for any single investor to serve in a corporate governance capacity. When this occurs, the only parties that have control over the firm are the managers. Managers will then have the power to

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10, No. 3, 195-214.

[33] Gerhard Pohl, Robert Anderson, Stign Classens, and Simeon Djankov, 1997, "Privatization and Restructuring in Central and Eastern Europe," World Bank Technical Paper No. 368, (Washington, D.C: World Bank); Goldstein, (1997).

act in their own interests, instead of in the interests of the shareholders. Although managers, even in the most developed of economies, will attempt to expropriate firm funds for themselves, in CEE and FSU, where any type of corporate governance mechanism is weak at best, this type of “managerial opportunism” is commonplace.[34] In the West, when other types of corporate governance fail, the courts can usually remedy any transgression taken by a manager. Investors who, individually or collectively as a cohesive group, hold a controlling block of the privatized shares, are in a better position to fulfill a corporate governance role, and it is in their best interest to do so. When individual investors hold a large portion of the firm, this actually can increase firm value, which is then reflected in stock price. This idea was asserted by Shleifer and Vishny (1986), and proven to be true in the case of Czech privatization by Claessens (1997).

Shares were also distributed to managers and employees during the privatization process. This was done to privatize SOEs quickly, as well as to portray the privatization programs as fair. From an efficiency standpoint, if managers become the owners of a firm, managers’ incentives should become aligned with those of the owners/shareholders, and the firm should be managed more efficiently. If managers know their personal wealth depends on how well the firm performs, then managers should do everything in their power to improve firm operations. However, as discussed earlier, this appears not to be the case in CEE and FSU.

Privatization Investment Funds

Many countries in CEE and FSU created special funds for privatized shares as part of their privatization programs. Because these funds were an integral part of the program, and in some cases, like the Czech Republic and Poland, investors were only

[34] Shliefer and Vishny, (1997).

allowed to invest in a fund, this provided an incentive for some non-firm entity (the privatization entity) to collect, analyze, and distribute information about any given newly privatized firm. Since the mangers of these privatization funds had to manage these funds effectively or be removed from their position, they did obtain all relevant financial and business information from a newly privatized firm, and then based investment decisions on this information. This concentrated form of share ownership encourages information flow, and therefore is beneficial to the creation of lasting market institutions. In fact, these funds are market institutions themselves, created to collect, use and disperse business and financial information.

However, many problems did occur in CEE and FSU with privatization funds when the managers of these funds were not qualified, or knowledgeable enough to manage them effectively. For example, fund management problems occurred in the Czech Republic and Poland. In the Czech Republic, many of the privatization funds were private, so these funds, when not managed correctly, simply went bankrupt. In Poland, private fund managers selected by the Polish government managed the National Investment Funds (NIFs). The government operated in a supervisory capacity as given to it by law. If the government determined that the fund managers were not performing adequately, the government had the authority to dismiss one fund manager and hire another.

If these funds were not regulated or managed properly, scandals and Ponzi schemes prevailed as was seen in Albania, Russia, and Romania.[35] If there were proper

[35] Albanian investment funds, which were found to be Ponzi schemes, were thousands of Albanian investors, lost their life savings in 1997. Russia's AO MMM privatization fund was also a Ponzi scheme where thousands of investors lost savings in late 1994. Romania's investment fund scandal happened in 2000, when investment funds failed to meet redemptions, because they were affiliated with large Romanian

regulatory mechanisms in place, PIFs served as valuable corporate governance mechanisms, and a first important step for long-term institution building in these economies. This transition from privatization funds to investment funds started in Latvia in 1997, where most privatization funds were converted into joint-stock companies by late 1998, and investment funds had to change their structure to conform with new investment fund law.[36] Romania started the transition from PIFs to investment funds, although this transition has been very tumultuous.

Privatization Programs in CEE and FSU

Table 1 provides an overview of the privatization programs in CEE and FSU. This chart started as an overview of mass privatization programs in CEE and FSU by Saul Estrin and Robert Stone at Cadogan Financial. It has been expanded by this researcher to include other countries in CEE and FSU that did not have mass privatization programs.

Of all the privatization programs in CEE and FSU, only four do not use PIFs or investment funds of any kind. Those countries are Georgia, Macedonia, Tajikistan, and Turkmenistan. Georgia has experienced a great deal ethnic strife and political turmoil due to conflicts with its breakaway regions of Abkhazia and South Ossetia. The voucher privatization program was approved as early as 1994, and was on course to start investment in some twenty (20) investment funds in 1995. However, it is unclear as to what type of privatization funds these were.[37] It appears that these funds were not used to privatize, or were put on hold, due to no law existing to regulate them. As of 1999, the

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banks (State-influenced) and were invested in illiquid stocks. (Cadogan Financial, (2001))

[36] Cadogan Financial, (2001).

[37] East/West Letter, March/April 1995.

investment funds law was still in the phase of being drafted.[38] Macedonia started its privatization program as early as 1989, but privatization did not start in earnest until 1995. Most firms were privatized through manager/employee privatization, with generous discounts made to both current and retired employees of the privatized enterprises. Since most firms were privatized in this manner, there was no demand for PIFs. Tajikistan implemented privatization laws as early as 1991 calling for voucher privatization. However, civil war prevented any privatization from taking place until 1997. In 1997, the government decided to not implement a voucher privatization program, and replaced it with cash privatization auctions instead of voucher auctions. At this juncture, there are no provisions in Tajikistan's laws for PIFs, and investment in PIFs in neither encouraged or required. Turkmenistan's privatization program consists of presidential decrees ordering the privatization of certain companies. In these cases, firms are "sold" to the president's cronies. In this "privatization program," the president does not order PIFs, so they are not used.

The newest of the mass privatization programs belongs to Bosnia-Herzegovina (B-H). B-H is a special case for mass privatization because two factions, the Bosnia-Herzegovina Federation and the Serb Republika Srpska, rule this country. Both rule approximately half the land mass of B-H. The guidelines for the privatization differ slightly between these two factions. (See Table 2.2) In addition, not only are firms privatized through voucher privatization, but there are mandated percentages of privatized shares that must go into special government funds –" 55% of the assets shall be transferred to six (6) funds: Fund of War Veterans, Invalids, and Families of Deceased (20%), Fund for Protection of War Veterans (8%), Retirement Fund (7%), Education

[38] Cadogan Financial, (1999).

Fund (5%), Family Planning Fund (5%), Population Resettlement Fund (5%), Restitution Fund (5%)."[39] Thirty percent (30%) of the assets shall be distributed through vouchers to the adult population, and the remaining fifteen percent (15%) of the assets will be offered to the market by the State-owned capital fund through offering shares to the capital market (IPOs) and by privatization projects."[40] B-H has used privatization assets to fund its veterans' and social security benefits, and is also building capital markets through a State-owned capital fund. Macedonia likewise had provisions for shares that were not acquired by managers or employees to be placed into the government pension fund. [41]

Croatia's mass privatization program vouchers were only distributed to refugees and victims of the recent civil war. These vouchers could then be used to buy shares directly in firms, or through privatization funds. By only distributing vouchers to refugees and victims, the privatization program became a sort of social security program or this group of people. This also happened in Chile, where privatized shares were invested in the State pension fund.[42]

The Czech Republic was the first nation to place privatized shares into private investment funds (PIFs). However, the lack of government regulations on PIF operations and a lack of qualified fund managers created problems not only in the Czech Republic, but in other countries as well.[43] In Poland, the Polish government regulates fifteen (15) National Investment Funds (NIFs). Private financial managers are asked to bid through

[39] Cadogan Financial, (2001).
[40] Cadogan Financial, (2001).
[41] This piece of information about Macedonia is acquired from its privatization website: http://www.mpa.org.mk.
[42] Yergin and Stanislaw, pgs. 241-243.
[43] Lack of adequate regulation and oversight of PIFs in Albania and Russia caused unscrupulous types to form Ponzi schemes with PIFs. These activities ended privatization in Albania and the ousting of their prime minister. Russia's wide-scale privatization program almost ended because of a Ponzi scheme with one of the PIFs, and almost lost Yeltsin a presidential election.

tender offer to be selected to manage Poland's NIFs. If the managers were considered to be remiss in their financial management duties, they were summarily fired by the government and replaced.

The privatization programs of Uzbekistan and Kazakhstan also used PIFs. Although there is government oversight, qualified privatization fund managers were hired and only quality firms are placed into the PIFs. The PIFs also have the freedom to buy and sell shares, instead of being restricted to the shares apportioned to them by the government. The key difference between the PIFs in Uzbekistan and Kazakhstan is that Kazakhstan distributed vouchers, and these vouchers could then be invested in PIFs. In Uzbekistan, in order to buy shares of privatized companies or to subscribe to a PIF, cash was required. The government of Uzbekistan issued no vouchers to the populace. All privatization was done through cash. The PIFs could then spend a "multiple of six times he cash subscribed to the funds at (privatization) auctions by means of a special state credit."[44]

<u>Measurement of Privatization Success in CEE and FSU</u>

The subject of privatization and the measurement of privatization success have been topics of great interest in the financial and economics literature for the last two decades. However, the actual measurement of "privatization success" in CEE (Central and Eastern Europe) and FSU (Former Soviet Union) has been conspicuously absent from the literature. The reasons for this phenomenon include:

1. Enterprise financial information is unreliable and, for the most part, unavailable in these regions.

[44] Cadogan Financial, (2001).

2. The politics in these regions so perverted the privatization process that any valid economic foundation was lost.
3. The lack of institutions or very early stages of institutional development in these economies lead produce data that does not represent true economic wealth and value, and instead reflects the inefficiency, corruption, and segmentation of these markets.
4. The low level of wealth in these transitional economies among investors.
5. The command economies in these regions left behind a culture of mistrust, and an unwillingness to share information concerning firm performance either before or after privatization. The whole purpose of privatization, in this sense, was to "release" information from the government to the market. The belief that "information is power" in these countries prohibits the distribution of reliable and accurate information.

It is widely thought that the "hindrances" to empirical privatization research in CEE and FSU are too many to perform a thorough financial analysis of privatization success. This is because many academicians consider privatization to be a financial innovation, much like an IPO (initial public offering), and hence, its success should be measured in accordance with, and under the assumptions of corporate finance and market theory. The problem, when considering privatization in CEE and FSU, is that privatization is a financial innovation, but it is used to achieve broader political, economic and societal goals. This financial innovation has been implemented in markets with no financial institutions, or very primitive ones at best, with no enforceable accurate way to record financial information, and designed with the specific motivation to achieve political goals. Knowing this, to judge and measure privatization performance in terms of information that does not exist or is not reliable, coming from institutions that are primitive or do not exist, and from a financial innovation that is politically motivated, is ill advised.

The success of privatization around the world can be measured in a number of different ways. The measurements of success using firm performance data tend to be the most popular way to measure privatization success. These studies measure success by using before and after privatization firm data. In one approach, financial, operating and performance data from both before and after privatization is collected from a number of newly privatized firms from around the world. Using non-parametric statistical techniques for three years before and three years after privatization, these data points are compared to see if there is any positive significant change in financial and operating performance after privatization.[45]

Financial and Operating Performance

To measure privatization success in terms of financial and operating performance, the privatization prospecti and annual reports containing detailed financial and operational information are needed from a number of firms located in a number of countries. The numerous studies spearheaded by Megginson collected this data from both before and after privatization, and showed that financial and operating performance significantly improved after privatization. The most important ingredient to this type of analysis is that enough firms must be willing to provide reliable and consistent data from their operations.

[45] Megginson, Nash and Van Randenbourgh, (1994); Boubakri and Cosset, (1999); D'Souza and Megginson, (2000).

The same types of financial and operating information could theoretically be collected from firms in CEE and FSU representing firm performance both before and after privatization, but this technique would be ill advised and unsuccessful. The success of privatization in CEE and FSU cannot be measured in the same way for the following four reasons:

1. "Before" privatization firm data for newly privatized firms is not available, and if it is, it is government-mandated data and therefore contrived and inaccurate.
2. "After" privatization firm data for newly privatized firms, if it is available, is not really comparable from firm to firm or from country to country. Even if international accounting standards have been adopted in the Central European or Central Asian country in question, they are not necessarily enforced. In addition, in many cases, local managers do not have the knowledge required to maintain the books in the new standardized manner.
3. Privatization in CEE and FSU is not simply a financial innovation to raise government revenues, or reduce government expenditure and debt. Privatization is politically driven, and thus its goals are not purely to improve the financial and operating performance of the firm[46], but as part of a larger plan of societal transformation. Privatization is considered one of the key components available to create the very market forces that it relies upon in

[46] As discussed in Chapter 2, improving the financial and operating performance of firms at times are probably the last goals to be considered when privatizing a firm.

other more developed economies.[47] Therefore, using firm data to test an innovation meant to bring about societal reform may be shortsighted.

4. In many parts of CEE and FSU, "privatization" is actually corporatization or restructuring. So the information collected before and after "privatization" may not even involve a privatization. It could be believed, from the perspective of the management providing data, that its firm is privatized. However, the firm providing data may actually be only corporatized or restructured and is still owned by the State.

Stock price growth

The success of privatization is also measured through stock price growth after privatization. Studies have compared subsequent stock prices after privatization with those of initial public offerings (IPOs). Privatizations have been found to have more significantly positive and longer stock price growth than IPOs, and are considered successful on this basis.[48]

In order to analyze stock prices of newly privatized firms, these newly privatized stock prices should be collected from local and international markets. In order to do this, the most reliable data will come from efficient and non-segmented financial markets. However, stock price growth of newly privatized firms in CEE and FSU is not a feasible method for measuring privatization success at this time. The reasons for this are as follows. At the time of privatization of many former SOEs in CEE and FSU, the financial institutions vital to measuring stock price were in their infancy. Efficient domestic stock markets did not exist. In addition, the stock markets in these countries

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[47] Goldstein and Gultekin, (1998).
[48] Dewenter and Malatesta, (1997).

markets still do not reflect all "available" information, because the dissemination of information is not prevalent in these markets. Also, for this same reason, stock markets in these countries tend to be highly segmented (even between cities).

Many of the newly privatized firms are not even listed on the national stock markets. The voucher privatization programs prevalent in these countries did not necessarily call for shares to be traded on the stock exchange. In addition, manager/employee privatization, again a widely used method of privatization, placed shares into the hands of managers and employees, and not on a stock exchange. Therefore, only a small percentage of the total privatized firms are listed on the stock markets. Therefore, a true measurement of the overall value of firms, according to stock price, is not possible at this juncture.

Again the definition of "privatization" comes into question. When the local enterprise states that it has been privatized, has it been privatized, or has it only been restructured or "corporatized." For these reasons, using stock price growth as a measurement of privatization success is not feasible in CEE and FSU, mainly because of the early stage of institutional development in these countries, as well as the types of privatization programs implemented in these countries.

Case Study

The case study method was one of the first methods used to observe the effects of privatization in CEE and FSU. Although this is a helpful method, it only considers the success of one firm, and does not tend to assess the success of the national privatization program overall.

Restructuring

Success has been measured in terms of the ability and willingness of the firm to restructure its finances and operations. Restructuring is considered to be a key component of SOEs competitiveness, and determines whether their operations will be able to compete and succeed in a market economy. One study on the restructuring of firms in CEE and FSU concluded that privatization had a significant positive influence on the restructuring of a firm. However, in a study of eight Polish firms, restructuring was shown to be successful without privatization, so privatization was not the key to restructuring. In terms of restructuring, privatization success has yet to be confirmed either one way or another.

Privatization success based on restructuring efforts requires the same detailed information that is required to measure the financial and operating performance of a firm after privatization. Much of this data is extremely difficult and time-consuming to collect, and the willingness of the firms in question to provide this information is very important. Also, the kind of restructuring can be defensive restructuring, which involves the streamlining of operations and improving the firm's ability to meet its financial obligations. This is usually what "restructuring" means when it is referred to in CEE and FSU. However, defensive restructuring can take place before or after privatization. Any operational and financial improvement resulting from restructuring that takes place before privatization would not necessarily be feasible to measure, considering the lack of knowledge of how records were kept before privatization. The other form of restructuring, or strategic restructuring, enables the firm to redirect its efforts to take advantage of growth opportunities.

The measurement of privatization success through restructuring efforts has produced conflicting results, probably because of the confusion between defensive and strategic restructuring. Two studies mentioned previously, Goonitilake (1998) and Pohl, et al (1997) confirm this. The same type of data collection that is required for financial and operation performance is also required for restructuring analysis, and the problems inherent in this have been mentioned under the section entitled "financial and operating performance."

Population Participation

The population's participation and ownership of newly privatized shares determine privatization success in some CEE and FSU countries. Privatization programs are often lauded as successful by national governments if ninety percent or more of the population participated in the privatization process.

All that is required to measure privatization success in this case is basically the percentage of the population that has participated in privatization, or the percentage of the population that received vouchers as part of a voucher privatization program. This is usually obtained from the government itself and in most cases a readily available piece of information. Using this method to measure privatization success may be useful to gauge the political success of privatization, and the likelihood that privatization will suffer a reversal of policy. Privatization success measured through participation does not really explain any improvements on the firm or societal level, and is not very useful except for public relations purposes.

Politics and Scandals

Sometimes opinion polls and politics determine whether privatization is a success.

If the populace feels positively about privatization and the growing market economy, privatization can be considered a success. If there are demonstrations concerning privatization and economic reforms, and the government in power feels the threat of being ousted, privatization is not considered as successful. In addition to population participation, the presence of politics against privatization, privatization scandals, and privatization Ponzi schemes in CEE and FSU are actually used as gauges of privatization success. In Albania for instance, the "government-sponsored" Ponzi scheme of the privatization program ended privatization for some time, as well as ousted the government in power at the time. In Russia, the "loans for shares" scheme, anti-privatization protests, and the feared defeat of Boris Yeltsin in 1996, were all signs of a privatization program that was administered poorly.

Privatization success in terms of opinion polls and politics is a more subjective form of measuring privatization success. These measures can be less reliable and less scientific than other forms of measuring privatization success. This is because any poll is only as good as its design and its questioner. Also, polls can be interpreted differently by different parties with diverse interests, so an "interpretation" can be self-serving.

Newspaper headlines and stories, as well as reports on the Internet can ascertain privatization success measured through scandals and schemes. Also, privatization program descriptions through sources like Privatisation International can also provide overviews of these programs, and any difficulties the program has encountered.

Although this measure of privatization success provides a very good indication as to whether privatization was administered properly, as well as if the population is "better off" after privatization than before, it does not give a complete picture of privatization success. The occurrence of scandals in the privatization process provides an interesting social dimension of privatization success, and it provides a good case analysis as to what happens when there is a fault in design or supervision of the privatization process. In this sense, this type of success measurement can provide an interesting perspective on success when used in conjunction with other measures of economic reform success.

Economic Reform

Privatization programs in Central and Eastern Europe and the Former Soviet Union, by their very goals and structures, are broad economic reforms. So in order to measure the privatization success in CEE and FSU, they must be viewed from this broader perspective. Stiglitz (1998), in addition to economic growth, provides five characteristics of a successful economic reform. An economic reform should improve the following areas of an economy: economic growth, education, infrastructure, health, knowledge and capacity building.

Much of the philosophy behind economic growth is expressed in the *Washington Consensus* discussed in Stiglitz (1998). The *Washington Consensus* refers to a set of economic reforms previously endorsed by such international development agencies such as the World Bank and the International Monetary Fund in order to promote the development of LDCs (less developed countries). The economic reforms associated with this program include increasing GDP per capita, price liberalization, and trade liberalization. Another key aspect of economic growth includes a strict monetary policy that controls inflation. After the Asian Financial Crisis, which started in 1997, international development agencies began to reconsider their commitment to the

Consensus, and needed a new paradigm for economic development. Stiglitz(1998) is one such proposal of a new way to envision economic reform.

Education

Education is vital to successful economic reform. An educated population is a more productive population. In terms of privatization, the education and retraining of manager, owners, and local investors is vital to privatization success. If these key players in privatization understand efficient business practices, and the important role enterprises play in creating wealth, the more likely newly privatized enterprises will be restructured and managed effectively.

Infrastructure

Infrastructure growth in terms of communication and transportation is not only necessary for the everyday operation of newly privatized firms, but is also necessary for the growth of these firms and private sector development in general. Countries with reliable infrastructure also attract foreign investment, which brings vital capital and technical expertise to the local business environment.

Another type of infrastructure that is import for newly privatized firms, as well as foreign investment, is the institutional infrastructure. This involves the legal and financial institutions that support business operations. Although there is a multitude of literature on the relationships between privatization and the improved efficiency of both firms and markets, literature is just now developing on the need for strong legal and financial institutions to be already in place in order for the privatization process to be a success. According to Bortolotti, Fantini, Siniscalco, and Vitalini (1998) in a study involving 49 countries from 1977-1996, the privatization process requires all of the above legal institutions and developed capital markets. Moers (1999) concurs with this conclusion in the study of growth and institutions in 25 Central and Eastern European countries from 1990-1995. He states that "good institutions guarantee property rights and minimize transaction costs." Institutions provide the "playground" for privatization. First, common law and civil law countries have different constitutional requirements that define economic activity and regulate State assets. Second, legal protection of economic activity differs from country to country and hence, so does the rate of financial market development. Applied to privatization, this means protection of investors, the need for liquid capital markets, and ownership concentration. The relationship between legal institutions and economic activity is presented in La Porta, Lopez de Silanes, Shleifer and Vishny (1996, 1997, 1998).

Looking at financial institutions, for instance banks, stock markets, and brokerages, Levine and Zervos (1998) find that stock market liquidity and banking development positively predict growth, capital accumulation, and productivity improvements. The authors also find that stock market size, volatility and international integration are not strongly linked with growth, and that neither stock market nor bank financial indicators are closely linked with private savings rates. Rajan and Zingales (1998) provide further proof of the link between financial development and economic growth by linking more developed financial markets with increased external financing to industrial sectors that need it.

Health

A healthy population is a population that can achieve economic growth. In CEE and FSU, SOEs provided much of the health and education services to the population.

When SOEs were privatized, many of these services disappeared, with no other private or public institution available to replace these services to the populace. In the case of CEE and FSU, privatization has led to the deterioration of education and health, and the life expectancy in many of these countries has dropped since privatization.

Knowledge

Privatization, as an economic reform, is also supposed to bring knowledge that will facilitate future business growth. Privatization has facilitated the implementation of international aid and education programs as incentives. However, foreign investment allows for even more business knowledge to be imparted to the local business community.

Capacity-Building

Privatization is supposed to act as a catalyst for future economic development. This means that the institutions and knowledge necessary to ensure successful privatization should spur increased business and economic growth. Privatization does not act as a catalyst if the growth of institutions and knowledge is prohibited by political motives or program design.

Conclusion

The transitional nature of the economies of CEE and FSU has led to the implementation of privatization programs not only that are of a unique design, but under circumstances which privatization was not theoretically intended. The lack of information and its unreliability inherent in CEE and FSU creates numerous difficulties in measuring privatization success in ways previously presented by economic and financial literature. A new paradigm presented by Stiglitz (1998) to assess the effectiveness of economic reform provides a starting point from which to measure the success of privatization in CEE and FSU.

Research Question

Measuring the success of privatization in CEE and FSU should answer the question, are economies, or "societies," that privatize, better off than economies that do not privatize? In addition to this broad query, this research has four objectives presented in the following questions:

1. What is the appropriate measure of "success" in CEE and FSU, where privatization programs comprise one part of an economic reform policy?
2. Given the appropriate measure and definition of privatization "success" in CEE and FSU, are privatization programs in CEE and FSU "successful"?
3. Of the privatization programs implemented in CEE and FSU, which ones are the most conducive to achieve "success"?
4. Do privatization programs have a discernible impact on economic, financial and social growth, or are their effects indistinguishable from those of other economic reforms?

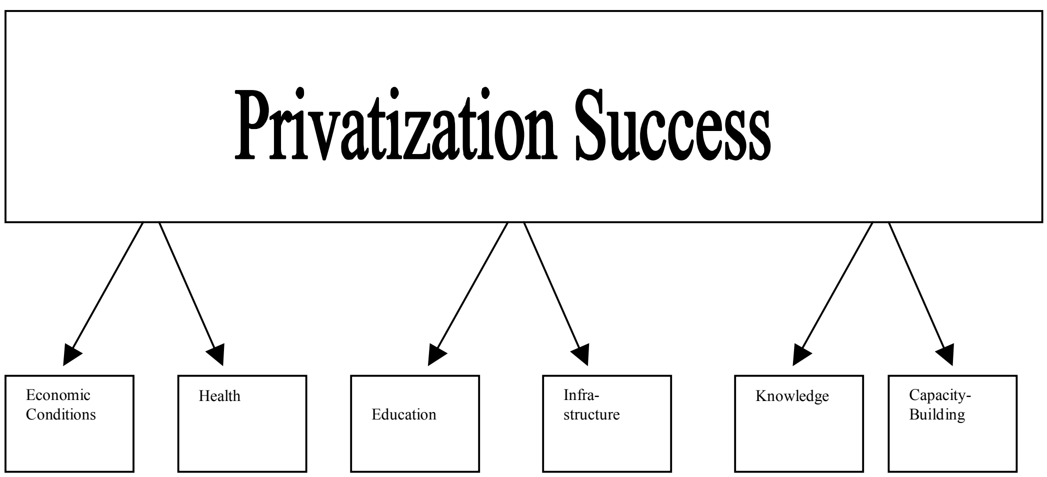
In CEE and FSU, privatization promised much more than "efficient" firms. Even if the promise was not "spoken," it was implied. Along with other economic reform policies, such as price and trade liberalization, and strict monetary and fiscal policies, privatization was implemented in order to correct significant problems in the existing "shortage economies," and be the primary driver behind the creation of a new market economy.

In order to measure the "success" of privatization, then, privatization in CEE and FSU needs to be considered a form of economic reform, and hence should be designed in such a way to achieve the objectives of economic reform outlined by Stiglitz (1998).

Therefore, privatization success is defined in this research as an overall improvement in societal welfare, measured by the six (6) criteria outlined by Stiglitz (1998): economic conditions, health, education, infrastructure, knowledge, and capacity-building.[49]

The following exhibit illustrates this paradigm. It uses variables that are recommended by Stiglitz (1998), and other texts such as the Indices of Economic Freedom, the *Privatisation International* yearly publication, and the World Bank *Transition* newsletter. Other sources of information include the 2000 World Development Indicators, Transparency International, World Health Organization, the Milken Institute, and the Eurasia Group and Lehman Brothers.

Figure 1: Privatization Success Model



The variables that describe each one of these six dimensions will be discussed further in the Methodology section and are found in Appendix A.

Given the paradigm outlined above, privatization is successful if the countries in CEE and FSU experience an overall improvement in the six dimensions outlined. The effects of privatization programs, after accounting for the other economic reforms that have been implemented, should be economic growth and an improvement in education,

[49] These six dimensions are explained in Chapter 2, Section 2.7.1.8.

health, infrastructure, and institutional development necessary for a market economy.

This research seeks to answer the question which privatization programs in CEE and FSU, if any, achieve the highest level of success, as measured by the paradigm in Figure 3.1. Mass privatization provides for the speedy distribution of assets out of state hands. This is its primary strength, given the sheer number of firms to be privatized in CEE and FSU, and the assumption that actors in the private sector of these economies are better able to allocate these assets efficiently than the state. Privatization through the sale of state assets to foreign investors or domestic entities is done on a case-by-case basis, and therefore does not privatize as quickly as mass privatization. The strength of this type of privatization is that it provides direct infusions of needed capital and skills into the firms very quickly, and sells assets to owners who have incentive and knowledge to create viable, ongoing concerns. Therefore, these new owners are compelled to collect and potentially distribute valuable financial and firm information to increase the value of their investment. Manager / employee privatization does nothing to change the control or management of the firm. In fact, as discussed previously, its main purpose in CEE and FSU is to maintain the status quo. The types of privatization just discussed can, and are, used in conjunction with privatization investment funds. These funds are used to build financial markets in CEE in FSU, provide a starting point to collect vital firm information, and when managed correctly, provide a much-needed corporate governance function. Another facet of a privatization program is its legal framework. Countries that have privatization laws in place at the time privatization is implemented should experience an overall improvement the six dimensions of success.

All of these privatization techniques have at least one advantage, except for manager / employee privatization. Therefore, mass privatization, privatization through sales, and privatization investment funds should result in some sort of positive movement in the six dimensions of economic reform. Unfortunately, since manager / employee privatization does maintains the "status quo," it is not expected to improve any of aspect of the six dimensions of economic reform success.

Privatization programs are simply part of one economic reform implemented in tandem with other economic reforms. These reforms are namely "shock therapy" reforms: liberalization of wage and price controls, trade liberalization, encouragement of capital flows, and less stringent fiscal policies. Privatization is in a unique position to create markets and value firms. The variables within the six dimensions that reflect these two aspects of an economy should, at the very least, be sensitive to privatization, and less so to the other economic reforms. It is understood that the other economic reforms listed may affect some of the success variables used in analysis more than privatization necessarily will. However, privatization alone should pose an overall positive effect on the six dimensions of privatization success explained earlier.

The following hypotheses are the result of the previous research question discussion.

H_0: There is no difference in the effectiveness of different privatization programs.

H_1: Most privatization programs promote improvement in the six dimensions of privatization success. Because of the inherent strengths in each of the programs analyzed, privatization through sales will affect a higher degree of societal improvement than mass privatization. Both sales and mass privatization will be more effective forms of privatization than manager/employee privatization.

Manager/employee privatization does not change firm operations, and therefore maintains the status quo. If the goal of privatization is to serve as a catalyst to societal transformation, then it should change both the managerial and ownership structure of the newly privatized firm. Privatization through sales should do more to affect a positive change in firm operations than privatization through methods that keep the same managerial power structure in place.

H_0: There is no difference in the effectiveness between privatization programs that encourage, or require, investment in Privatization Investment Funds (PIFs), and those programs that do not.

H_2: Privatization programs that encourage, or require, investment into Privatization Investment Funds (PIFs) will be more effective than privatization programs that do not.

Privatization programs that encourage, or require, the investment of privatized shares into privatization funds should achieve a higher level of success. Privatization funds provide an essential corporate governance function, and also are an integral part in the financial institutional development of an economy. Funds also facilitate the sharing of information, and allow potential investors to make more informed investment decisions.

H_0: There is no difference between privatization effectiveness in countries that have privatization laws in place at the time of privatization, and those countries that do not.

H_3: Governments that have instituted some form of oversight or regulatory body, in the context of laws, before privatization will be more successful than governments that enacted oversight after the privatization program was implemented.

In CEE and FSU, there are some instances of privatization laws being passed after privatization has started. This phenomenon allows privatization to be started under unregulated conditions, and to go "unchecked" until the regulatory institutions are in place to correct and prevent fraudulent practices. Fraudulent practices remove wealth from investors, corporations, and society in general. For these reasons, governments that institute laws that mandate privatization oversight and protection of the investor should have privatization programs that are more successful relative to countries that did not enact laws before commencing with privatization.

H_0: There is no discernible difference between the effectiveness of privatization programs and other economic reforms, namely liberalization of wage and price controls, trade liberalization, promotion of capital flows, and more stringent fiscal policies.

H_4: Privatization programs do contribute to more successful societal transformation, and their effects are discernible from those of other economic reforms.

Privatization provides a key and integral part to economic reform efforts. Although it is acknowledged that other economic reforms may have a stronger effect in certain areas of the economy than privatization, privatization’s effects, especially in the financial arena, are essential in the creation of a market economy.

Data and Methodology

Data

The variables used to describe the six dimensions of economic reform success are collected from a number of sources: *World Development Indicators*[50], The 1997-2001 Indices for Economic Freedom[51], *Corruption Perceptions' Index*[52], *Capital Access Index*[53], the privatization program statutes from each of these countries[54], the Liberalization and Stabilization Indices[55], Privatisation International yearbooks for 1998-1999[56], Privatisation International database[57], Cadogan Financial[58],various newspaper, magazine, and Internet articles[59], and the Country Stability Index[60].

To accurately describe the six dimensions of success, Stiglitz (1998) provides a number of variables used in this analysis.[61] Upon further research in these other sources, more variables were collected that describe privatization success.

Originally, eighty-two (82) variables were found that potentially described

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[50] World Development Indicators 2000, CD-ROM, (Washington, D.C.: World Bank, 2000).

[51] Gerald O'Driscoll, Jr., Kim R. Holmes, Brian Johnson, and Melanie Kirkpatrik, eds., Index of Economic Freedom (New York, NY and Washington, D.C.:Wall Street Journal and Heritage Foundation,1997-2001).

[52] "Corruption Perceptions Index," 1995-2001, Transparency International, Göttigen Universität, <http://www.transparency.org>.

[53] "Capital Access Index 2001," Glenn Yago, Thomas Hall, Susanne Trimbath, and Juan Montoya, 20 March 2000, Milken Institute <http://www.milkeninstitute.org> I-2 – I-3.

[54] Privatization statutes for each of the 26 countries are available on the Internet through the privatization agency websites for each of these countries, or through a World Bank sponsored website Privatization Link at <http://privatizationlink.ipanet.net>.

[55] Gomulka, Stanislaw, "Ten Years in Retrospect: Secrets of Successful Macroeconomic Policies," Transition Newsletter August-October 2000 18.

[56] Privatisation International Yearbook, (London: IFR Publishing 1998, 1999).

[57] Privatization International Database, CD-ROM, (London: Privatization International and the Thomson Group 1999).

[58] "Country Summaries and Summary of Mass Privatisation Programs," 1998-2001, Cadogan Financial <http://www.cadoganfinancial.co.uk>.

[59] If news articles were not accessed via the Internet, the Wall Street Journal and Central European (a Euromoney publication) were the primary sources of news reports.

[60] Growth Stability Index, 2001, Lehman Brothers and Eurasia Group <http://www.legsi.com>.

[61] These variables are as follows: GDP per capita, economic assistance, unemployment, inflation, life expectancy, infant mortality, physicians, mortality rate < 5 years, illiteracy rate, tertiary school enrollment, foreign investment, power usage, regulations, black markets, and property rights.

privatization success. However, lack of availability of data for CEE and FSU, the replication effects of some variables, and conflicts with control variables reduced this number to fifty-five (55) variables. These fifty-five variables are the variables used to commence this analysis, and are listed, with their sources, in Appendix A.

Methodology

In order to accurately measure the six dimensions of economic reform success, fifty-five variables[62] were chosen based on their availability for each of the twenty-six countries in the sample. Missing variables, and the fact that some of the countries had just started their privatization programs, caused the elimination of four of these countries: Bosnia-Herzegovina, Croatia, Macedonia, and Turkmenistan.[63] The twenty-two remaining countries represent the entire population of former command economies to implement quick transition to a market economy, and the entire population of countries within the EBRD (European Bank for Reconstruction and Development) for which there is sufficient post-privatization economic and social data available.

The change in each of the fifty-five variables is calculated for the three years after privatization. Year 0, the year of privatization, is not included in this change calculation. Therefore, the change is calculated as follows: (Year 3 – Year 1) / Year 3. A positive change represents an increase in value. A negative change represents a decrease in value.[64]

Many of the fifty-five variables are highly correlated with one another, so a Pearson's correlation is done with the fifty-five change calculations for each of the twenty-two countries. Once the correlation is performed, variables are methodically

[62] The fifty-five variables are listed in Appendix A.
[63] The reasons these four countries are eliminated are highlighted in Chapter 2.

eliminated in the following manner.

1. Variable-pairs with a correlation of .500 and higher are identified.
2. Those pairs that are the highest correlated are analyzed first.
3. For each variable of a correlated pair, the number of correlations greater than or equal to .500 with other variables is counted. The variable that is highly correlated with the most variables is kept, and the other variable is removed from the analysis.
4. If there is a case where both variables in a correlation pair have equal numbers of correlations greater than or equal to .500 with other variables, then the strength of the respective correlations is taken into consideration. The variable that has the highest correlation coefficients is kept, and the other variable is removed from the analysis.

This procedure is performed until there are no more variables correlated with one another at .500 or above. This reduced the number of variables that described privatization / economic reform success to 14 variables. The fourteen success variables are as follows: Economic Freedom measure for Black Markets, Economic Freedom measure for Regulation, Fertility Rate, Gross Domestic Product (GDP), Market Capitalization, Mobile Phones, Mortality Rate for < 5 years, Official Development Assistance, Radios, Goods Transported by Road, Percent of Paved Roads, Value of Stocks Traded, Telephone Lines and Waiting Time for a Telephone.

A simple factorial design is created to observe mean changes in these "success variables" related to different characteristics of privatization and economic reform. Since this analysis describes an entire population of countries that has administered

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[64] The year of privatizationn, and the three years after priatization arlisted in Appendix G.dat

privatization programs as part of a complex program of economic reform and market transformation, the results of this analysis are descriptive, rather than inferential in nature. There are three key aspects of the privatization / economic reform programs examined in this analysis.

1. Types of privatization in a country's privatization program,
2. Other economic reforms as part of the "shock therapy" that are implemented simultaneously with privatization,
3. Whether a comprehensive privatization law is in place at the time of privatization.

The objective of the methodology is to perform a series of mean analyses on various combinations of scenarios involving the above characteristics. These mean analyses are performed two aspects at a time, since there are only 22 countries in the population. There are approximately 10 observations (countries) per characteristic analyzed per mean analysis, which provides a reliable description of the effects of privatization.

The types of privatization examined in this analysis include mass privatization (MASS), privatization through sales (SALE), manager/employee privatization (MEP), and privatization where investment in privatization investment funds (PIF) is encouraged, or required. Each of the "treatments" for this experiment is a binary variable with a value of "0" or "1". "1" is used if the privatization program of a given country includes that type of privatization, "0" if it does not.

The "control" for this experiment includes the other "shock therapy" reforms that are implemented at the same time as privatization, and can perceivably cloud or enhance the effects of privatization. These four control variables represent four key economic reforms in these economies, and are as follows: wage and price controls (WAGE), trade (TRADE), capital flows and foreign investment (FLOWS), and fiscal burden (FISCAL). These four controls are all derived from the Index of Economic Freedom, a yearly Index published by the Heritage foundation and the Wall Street Journal. Each one of these measures ranges from "1" to "5". Five represents the case when these factors are totally controlled by the government, and a lack of "economic freedom." One represents the case when primarily the "market" dictates these factors and full "economic freedom" exists. The variables WAGE, TRADE, FLOWS, and FISCAL are all controls, to more specifically determine if the level of improvement measured by the mean analyses is derived from privatization, or from the economic reforms associated with "shock therapy." The control variables will be represented by the "change" in these four factors from 1995-2002, which, in reality, represents the conditions in these countries from 1994-2001.

For WAGE, the score ranges from "1" to "5," where "5" represents total government control over wages and prices, and "1" represents total market determination of wage and prices. A positive change in this control signifies the implementation of wages and price controls. A negative change represents the freeing of wage and price controls.

TRADE will range from "1" to "5" as well, where "5" represents stringent tariffs and custom controls over trade, and "1" represents no hindrances on trade through tariffs or other custom controls. A positive change in TRADE signifies the implementation of trade restrictions and tariffs. A negative change represents the further liberalization of trade.

FLOWS, or the Economic Freedom measurement of Capital Flows, will proxy for currency convertibility. A "5" represents the case when tight controls are placed on capital flows and foreign investment, which can include government mandated exchange rate(s). A "1" represents complete allowance for capital flows in and out of the country in question, and no hindrances on foreign investment, both of which would require a convertible currency. A positive change in FLOWS represents a tightening of controls on capital flows into and out of the country in question. A negative change in FLOWS marks a change in the regulations, where funds are allowed to move more freely into and out of the country.

Lastly, FISCAL, or the Economic Freedom measurement of Fiscal Burden, proxies for a decrease in public sector spending. A large portion of this measurement is the tax rate. If a government expects to spend, it will tax its population more. Also, a portion of this variable represents government expenditures as a percentage of GDP. The lower the tax rate and the lower percentage of government expenditures, the closer the measurement will be to "1." The higher the tax rate and the higher the percentage of government expenditures, the closer this measurement will be to "5." A positive change in this factor signifies increased taxes and/or increased fiscal spending as a percentage of GDP. A negative change represents lowered taxes and/or decreased fiscal spending as a percentage of GDP.

The last aspect of this analysis is the condition that describes whether or not privatization law is in place at the time of privatization. It is a binary variable, which represents whether or not privatization law has been enacted at the time of privatization. "1" indicates yes, and "0" indicates no. Appendix B contains the values for each country in the analysis for privatization type, the controls, and whether or not privatization law was present at the time of privatization.

The mean analysis of this experiment is performed using each of the 14 variables that describe "success," and for the following scenarios involving privatization type, economic reform, and privatization law. The first mean analysis involves observing the effects of the implementation of certain types of privatization on each success variable (PZTYPE). The second mean analysis examines interactions between privatization type and whether a privatization law was enacted at the time of privatization (PZ/LAW), and their effects on the success variables. The third mean analysis observes interactions between economic reforms implemented and privatization law, and their effects on the success variables (CNTRL/LAW). The last mean analysis examines the interaction between privatization type and economic reform, and their effects on the success variable in question (PZ/CNTRL).

A way to understand the process of mean analysis is to see it illustrated. The following figure is an illustration of the PZTYPE mean analysis using the treatments MASS and SALE (representing mass and sale privatization).

Figure 2: Illustration of Mean Analysis

		SALE	
		0	1
MASS	0	$E(Y_{00})$ No Mass, No Sale	$E(Y_{01})$ No Mass, Sale
	1	$E(Y_{10})$ Mass, No Sale	$E(Y_{11})$ Mass, Sale

For each variable, the change calculation for each country is placed in the quadrant of the matrix that best describes its privatization program. If there are quadrants that are empty, those scenarios are not present in the analysis. The mean of the change data is calculated for each quadrant and compared. This procedure can be explained mathematically using a regression equation.

$$E(Y) = \alpha + \beta_1 MASS + \beta_2 SALE + \beta_3 (MASS*SALE)$$, where

the βs are slopes that describe relationships between the two privatization types. The coefficients are descriptive in nature, so p-values and other tests of "significance" are not needed.

For the first analysis, PZTYPE, the mean analysis is described in Appendix B. The left column depicts the types of privatization that are tested. The middle column describes each scenario. The right column indicates whether a particular scenario is observed in the analysis.

The mean analysis, which shows the effects of privatization type and the presence of privatization law at the time of privatization, is in Appendix D. Its design is similar to the test in Appendix B, except that it deals with privatization type and the presence of privatization law at the time of privatization, and not just privatization type.

The mean analysis to determine the effects of economic reform and the presence of privatization law on the variables of privatization success is presented in Appendix E. This test determines the interactions, if any, between privatization law and economic reform, and their effects on success variables. There are five "control measures" used. The first, CNTRL, is the net change of the other four variables: WAGE, TRADE, FLOWS, and FISCAL. The other four control variables are then tested separately. In addition, positive movements (PC, PW, PR, PL, PS), zero movements (ZC, ZW, ZR, ZL, ZS), and negative movements (NC, NW, NR, NL, NS) in these variables are considered, with respect to whether privatization law is in place at the time of privatization.

The mean analysis for PZ/CNTRL determines the interactions between privatization type and economic reform and their effects on a given privatization success variable, is in Appendix F. Its design closely resembles the design of the CNTRL/LAW test, except that it observes the effects of privatization type and economic reforms. Like the previous mean analysis, this analysis uses five different measure of controls: CNTRL, WAGE, TRADE, FLOWS, and FISCAL.

<u>Results</u>

The following are the results for of the mean analysis for the fourteen variables that represent determine privatization and economic reform success. The first part of this section will discuss the support of hypotheses. The second part of this section discusses the detailed results for each variable, which are condensed into a table in Appendix H.

<u>Support of Hypotheses</u>

The mean analysis outcomes in terms of accepting or rejecting hypotheses are presented in Table 2. The results for each of the fourteen variables are expressed in terms of accepting or rejecting the four hypotheses.

Table 2: Support of Hypotheses

Hypotheses	Accepted by Variables	Rejected by Variables, Accept H_0
H_1: Privatization through sales will affect a higher degree of societal improvement than mass privatization. Both sales and mass privatization will be more effective forms of privatization than manager/employee privatization.	Market Capitalization, Official Development Aid, Value of stocks traded	All others
H_2: Privatization programs that encourage, or require, investment in Privatization Investment Funds (PIFs) will be more effective than privatization programs that do not.	Official Development Aid	All others
H_3: Governments that have instituted some form of oversight or regulatory boy, in the context of laws, before privatization will be more successful than those that do not.	Regulation, Official Development Aid	All others
H_4: The effects of privatization programs are discernible from those of other economic reforms.		All variables

In summary, most success variables in this analysis reject the alternate hypotheses, and accept the null hypotheses. Although the effectiveness of certain privatization programs can be ascertained observing increases in market capitalization, official development aid, and stock value, when compared against other economic reforms, its effects on societal transformation cannot be discerned from those of the other economic reforms. In addition, the only "true" effect of privatization, compared to economic reforms, is observed with the variable "regulation." However, privatization does not lead to a decrease in regulation, but to an overall increase in regulation. Another interesting result is observed concerning privatization funds. It appears that the only discernible increase in any variable that can be attributed to privatization investment funds is that of official development assistance. Lastly, concerning the presence of privatization law, variables that accept Hypothesis Four are listed above. Those countries that have no privatization law at the point of privatization have zero growth in regulation or in telephone waiting time, positive growth in official development assistance and negative growth in goods transported. Of these variables, Hypothesis Four is only accepted by the "goods transported by road," and weakly by the "regulation" variables. It appears for the other success variables that privatization law has no discernible effect.

General Results

The mean analyses for black markets reveals an interesting trend. Black market activity does not seem to be affected as much by privatization as it is by the other economic reforms implemented simultaneously with privatization. Fewer restrictions on economic activity tend to lead to a higher prevalence of black markets in CEE and FSU. Greater restrictions on economic activity lead to a reduction in black market activity in this region. This can be explained by the definition of black market activity in these regions. Black market activity is defined as commercial activities that are forbidden by law. It could simply be that certain laws that stipulate certain activities as illegal, have simply not been repealed in as timely a manner as economic reforms have been implemented. Therefore, entrepreneurial activity that is encouraged by economic reforms, including privatization, is not necessarily "legal."

Regulation tends to increase after privatization, especially for those countries that have privatization laws in place at the time of privatization. In addition mass and manager / employee privatization tend to cause the highest mean increases in regulation, where privatization through sales tends to result in the lowest mean increases, or a zero increase in regulation. Most importantly, privatization alone, despite changes in other economic reforms, tends to cause an increase in regulation overall. This reflects the need for more laws and regulations in place at the time of privatization, as well as new regulations to increase after privatization as issues surface, and remedies are sought.

Fertility rate decreases the three years after privatization, and does not appear to be sensitive to any one economic reform or privatization program. However, if there is not a net change in economic reforms, there appears to be a steeper decrease in fertility rate than if there is any other type of change (positive or negative) in economic reform. This overall decrease in fertility rate can be interpreted as a reaction to the uncertain economic situation in these economies.

There appears to be a positive, but low, increase in GDP for the three years after privatization. However, there are a few exceptions to this finding. If there is no change in economic reform policy after privatization, this tends to lead to negative GDP growth.

If there are restrictions on trade after privatization, this results in negative GDP growth. This confirms the need for foreign trade after privatization to increase economic growth. In addition, if there are less restrictions on capital flows and foreign investment, the result can be negative GDP growth. This is perhaps the result of global speculation and financial crises on the weaker economies of CEE and FSU. From these results, it appears economic reforms appear to have stronger effects on GDP growth than privatization. Privatization tends to have a low positive effect, whereas certain economic reforms or the lack thereof, can produce negative effects.

Although it may seem obvious that privatization should automatically lead to increased market capitalization, this is not necessarily the case in CEE and FSU. Although there is a positive and relatively high change in market capitalization the three years after privatization, if there is no change in the other economic reforms after privatization, there tends to be a zero mean change in market capitalization after privatization. Therefore, other economic reforms appear to play as important a role in market development after privatization as privatization programs do. In addition, privatization programs that include manager / employee privatization, and **do not** include sale privatization tend to experience zero or negative market capitalization growth the three years after privatization.

The mean change in mobile phones the three years after privatization tends to be positive and high. This is not sensitive to any particular economic reform or privatization program. This results seems to be purely indicative of the globalization of the markets in CEE and FSU, and the ease with which these systems can be installed and used.

The mortality rate for children five years and under falls consistently the three years after privatization. For the most part, this trend is not very sensitive to economic reform or privatization programs. However, there is one trend that appears. The countries, where sale privatization is not included in their privatization program, experience a lower decrease in mortality rate.

The mean analyses of official development aid yields interesting results. As a country implements more economic reforms, its level of development aid decreases. As countries enact more restrictions on their economies, development aid increases. This is perhaps the result of attempts by global development agencies to help countries whose economies are very restrictive. In addition, two types of privatization programs tend to be strongly endorsed by those who provide development aid, sale privatization programs and those programs that implement privatization investment funds. These two types of privatization programs consistently resulted in positive increases in development aid.

The growth in radios per 1,000 people was positive and low for the three years after privatization. This does not appear to be sensitive to any particular economic reform or privatization program.

The change in goods transported by road variable seems to reflect the effect of changing old pathways of doing business. This variable seems to increase after privatization if there are no changes in economic reforms, or if there are restrictions placed on economic reforms. Privatization results in decreased transportation of goods by road. However, privatization programs that did not implement sale privatization actually had an increase in goods transported after privatization. It seems that both privatization and economic reform efforts adversely affect distribution systems. This could also be a result of the questionable distribution management after privatization.

The change in paved roads after privatization tends to be zero, or very low and positive. This can be attributed to the fact that government spending is cut, due to the problems the countries in CEE and FSU are experiencing, and the reforms they are implementing.

Not surprisingly stock values tend to increase after privatization, but it is hard to link this increase to any one particular type of privatization. However, manager / employee privatization tends to be the most highly associated with negative changes in stock value. In addition, any circumstance where there was a zero change in economic reform, or where there were more restrictions placed on economic reform, resulted in a decrease in stock value. Again, as was observed in the results for market capitalization, there tends to be a strong association between stock value and economic reforms.

There tends to be a small increase in telephone lines after privatization. Although there are a few exceptions of negative growth, these exceptions tend to be incidental, and only include one observation.

Telephone waiting time tends to decrease after privatization. A particular type of privatization cannot be attributed to this effect. Other economic reforms tend to have a stronger effect, positive or negative, on telephone waiting time. A trend is observed in countries that have a zero net change in their controls. Those countries that do not implement additional economic reforms after privatization tend to experience a zero change in telephone waiting time after privatization. In addition, if a country implements more restrictions on economic activity after privatization, telephone waiting times decrease at a higher rate than other instances where zero or more economic reforms are implemented.

Conclusion

In conclusion, it appears that there is positive economic, financial, and social growth after privatization in CEE and FSU. However, the effects of privatization programs in CEE and FSU can not be distinguished from those of the other "shock therapy" reforms implemented simultaneously with privatization. However, it is not said that privatization does not have some discernible effect on societal transformation, since countries that implement manager/employee privatization, and do not have sale privatization as part of their programs display a visible negative impact on market capitalization, value of stocks traded, and official development aid. In addition, privatization has an influential effect on the regulation variable, where privatization, most often mass privatization and manager/employee privatization, causes increases in regulation after privatization.

Lastly, a potential issue concerning official development aid needs to be discussed. It appears that development aid increases with the implementation of economic restrictions after privatization. The fact to note is that this occurs after privatization. Therefore, countries had a certain level of economic reform, then after privatization, placed further restrictions on economic activity, and then received development assistance afterward. Whether development aid is being distributed unwisely, whether it is rewarding wrong behavior, or simply enhancing troubled economic reform programs, this is an interesting finding that deserves further scrutiny.

Table 1: An Overview of Privatization programs in CEE and FSU

Country and start date of distribution of privatization vouchers (or start date of program*)	Shares issued in waves (W) and continuously (C)	Vouchers: Bearer (B), Registered and Tradable (T), Non Tradable (N)	Investment through Privatization funds Allowed (A), Encouraged (E), Compulsory (C)	Independent Fund Managers (I) or Self Managed Fund (S)
Albania (1995)	C	B	E	I
Armenia (1994)	C	B	A	I
Azerbaijan (1997)	C	B	A	I
Belarus (1995)	C	B	A	S
Bosnia-Herzegovina (2000)	W	B/N**	A	I
Bulgaria (1995)	W	N	E	S
Croatia (1998)	W	N	E	S
Czech Republic (1992)	W	N	E	I
Estonia (1993)	C	T	A	I
Georgia (1995)	C	N/A	-	-
Hungary (1991)*	-	-	A	I
Kazakhstan (1994)	W	N	C	I
Kyrgyz Republic (1994)	C	B	A	I
Latvia (1994)	C	T	A	I
Lithuania (1991)	C	T	A	I
Macedonia (1989)*	-	-	-	-
Moldova (1994)	W	N	E	I
Poland (1995)	W	T	C	I
Romania (1992)	C	B	C	S
Romania (1995)	W	N	A	S
Russia (1992)	C	B	E	S
Slovak Republic (1992)	W	N	E	S
Slovenia (1994)	C	T	A	I
Tajikistan (1997)*	-	-	-	-
Turkmenistan (1998)*	-	-	-	-
Ukraine (1995)	C	N	A	S
Uzbekistan (1996)*	-	-	C	I/S

Key: * These countries did not implement mass privatization programs, but may have used privatization funds to help privatize SOEs.
** The Bosnia-Herzegovina Federation allows free trade of vouchers, and all that is required to acquire vouchers is that the individual be a citizen. The Republika Srpska (within Bosnia-Herzegovina) does not allow the free trade of vouchers.
Source: Cadogal Financial, plus additions by the author.

Appendix A: Variables for the Six Dimensions of Privatization Success

Economic Conditions Variables	**Source**
Δ GDP per capita	2000 World Development Indicators
Δ Changes in Net Reserves	2000 World Development Indicators
Δ Gross International Reserves	2000 World Development Indicators
Δ Lending Rate	2000 World Development Indicators
Stabilization Index	"Transition Newsletter"
Δ Official Development Assistance	2000 World Development Indicators
Δ Unemployment	2000 World Development Indicators
Δ Inflation	2000 World Development Indicators
Δ Monetary Policy	Index for Economic Freedom 1995-2002
Δ Government Intervention	Index for Economic Freedom 1995-2002
Δ Consumer Price Index (CPI)	2000 World Development Indicators
Δ Privatization Proceeds	2000 World Development Indicators
Δ Stocks traded (%GDP)	2000 World Development Indicators

Health Factor Variables	**Source**
Δ Male Life Expectancy	2000 World Development Indicators
Δ Female Life Expectancy	2000 World Development Indicators
Δ Infant Mortality	2000 World Development Indicators
Δ Physicians per capita	2000 World Development Indicators
Δ Mortality before 5 years old	2000 World Development Indicators
Δ Immunizations, DPT and Measles	2000 World Development Indicators
Δ Fertility Rate	2000 World Development Indicators
Δ Hospital beds	2000 World Development Indicators
Δ Death rate	2000 World Development Indicators

Education Factor Variables	**Source**
Δ Illiteracy Rate	2000 World Development Indicators
Δ Female Illiteracy Rate	2000 World Development Indicators
Δ Primary Schools enrollment	2000 World Development Indicators
Δ Secondary Schools enrollment	2000 World Development Indicators
Δ Tertiary school enrollment	2000 World Development Indicators

Infrastructure Factor Variables	**Source**
Δ Telephone Mainlines	2000 World Development Indicators
Δ Telephone Mainlines Waiting List	2000 World Development Indicators
Δ Electricity Production	2000 World Development Indicators
Δ Roads, paved %	2000 World Development Indicators
Δ Diesel locomotives	2000 World Development Indicators
Δ Internet Hosts	2000 World Development Indicators

Knowledge Factor Variables	**Source**
Δ Radios	2000 World Development Indicators
Δ Newspapers	2000 World Development Indicators
Δ Telephone Mainlines Waiting Time	2000 World Development Indicators
Δ Mobile phones	2000 World Development Indicators
Δ Personal Computers	2000 World Development Indicators
Δ Cable subscribers	2000 World Development Indicators
Δ Fax machines	2000 World Development Indicators

Capacity-Building Factor Variables	**Source**
Δ Market Capitalization	2000 World Development Indicators
Δ Stock turnover	2000 World Development Indicators
Δ Banking	Index for Economic Freedom
Int'l Accounting Standards (IAS)	International Accounting Standards Board
Capital Access Index (CAI)	Milken Institute
Δ Air Freight	2000 World Development Indicators
Δ Rail Freight	2000 World Development Indicators
Δ Air passengers	2000 World Development Indicators
Δ Rail passengers	2000 World Development Indicators
Δ Air departures	2000 World Development Indicators
Δ Goods transported by road	2000 World Development Indicators
Δ Vehicles per 1,000 people	2000 World Development Indicators
Δ Regulation	Index for Economic Freedom
Δ Black Markets	Index for Economic Freedom
Δ Property Rights	Index for Economic Freedom
Corruption Perceptions Index (Corrupt. PI)	Transparency International

Appendix B: Country Characteristics

Country	SALE	MEP	MASS	PIF	LAW	WAGE	TRADE	FLOWS	FISCAL	CNTRL
Albania			1	1	1	0	1	0	-0.5	0.5
Armenia		1	1	0	1	-1	-1	0	-0.5	-2.5
Azerbaijan			1	0	1	0	-1	0	-0.5	-1.5
Belarus		1	1	1	1	1	-1	0	-0.5	-0.5
Bosnia-Herzegovina	1		1	0	1	-1	0	0	0	-1
Bulgaria	1		1	1	1	0	1	-1	-1	-1
Croatia	1		1	1	1	1	2	1	0.5	4.5
Czech Republic	1		1	1	1	0	0	0	-0.5	-0.5
Estonia	1		1	0	1	0	1	0	-0.5	0.5
Georgia	1	1	1	0	1	0	0	0	-1	-1
Hungary	1			0	0	0	0	0	-1	-1
Kazakhstan	1		1	1	0	0	-1	0	-1	-2
Kyrgyz Republic			1	0	1	-1	0	0	-1	-2
Latvia	1		1	0	1	0	-2	-1	1	-2
Lithuania	1		1	0	1	0	-3	-1	1	-3
Macedonia		1		0	1	*	*	*	*	*
Moldova		1	1	1	1	0	0	0	0	0
Poland	1		1	1	1	0	-2	0	0.5	-1.5
Romania	1	1	1	1	1	0	1	0	0	1
Russia	1	1	1	1	1	0	1	1	0.5	2.5
Slovak Republic	1		1	1	1	0	0	1	0.5	1.5
Slovenia		1	1	0	1	0	0	-2	0	-2
Tajikistan	1	1		1	1	-1	-2	-1	-1	-5
Turkmenistan		1	1	0	1	0	0	0	0	0
Ukraine		1	1	0	1	0	0	0	-0.5	-0.5
Uzbekistan	1	1		1	1	0	0	0	0	0

Key: MASS = mass privatization; SALE = sale privatization; MEP = manager / employee privatization; LAW = presence of privatization law when privatization implemented; WAGE = change in wage and price controls; TRADE = change in foreign trade; FLOWS = change in capital flows and foreign investment; FISCAL = change in fiscal burden; CNTRL = net change in WAGE, TRADE, FLOWS, and FISCAL.

Appendix C: Scenario analysis for PZTYPE

MASS / SALE	Scenario	Present
NMNS	No Mass, No Sale	No
MNS	Mass, No Sale	Yes
NMS	No Mass, Sale	Yes
MS	Mass, Sale	Yes
MASS / MEP	**Scenario**	**Present**
NMNE	No Mass, No MEP	Yes
MNE	Mass, No MEP	Yes
NME	No Mass, MEP	Yes
ME	Mass, MEP	Yes
MASS / PIF	**Scenario**	**Present**
NMNP	No Mass, No PIF	Yes
MNP	Mass, No PIF	Yes
NMP	No Mass, PIF	Yes
MP	Mass, PIF	Yes
SALE / MEP	**Scenario**	**Present**
NSNE	No Sale, No MEP	Yes
SNE	Sale, No MEP	Yes
NSE	No Sale, MEP	Yes
SE	Sale, MEP	Yes
SALE / PIF	**Scenario**	**Present**
NSNP	No Sale, No PIF	Yes
SNP	Sale, No PIF	Yes
NSP	No Sale, PIF	Yes
SP	Sale, PIF	Yes
MEP / PIF	**Scenario**	**Present**
NENP	No MEP, No PIF	Yes
ENP	MEP, No PIF	Yes
NEP	No MEP, PIF	Yes
EP	MEP, PIF	Yes

Key: MASS = mass privatization; SALE = privatization through sales; MEP = Manager/employee privatization; PIF = privatization funds used in privatization; Yes = scenario observed; No = scenario not observed.

Appendix D: Mean Analysis for PZ/LAW

MASS and LAW	**Scenario**	**Present**
MYA	Mass, Yes Law	Yes
NMYA	No Mass, Yes Law	Yes
MNA	Mass, No Law	Yes
NMNA	No Mass, No Law	Yes
SALE and LAW	**Scenario**	**Present**
SYA	Sale, Yes Law	Yes
NSYA	No Sale, Yes Law	Yes
SNA	Sale, No Law	Yes
NSNA	No Sale, No Law	No
MEP and LAW	**Scenario**	**Present**
EYA	MEP, Yes Law	Yes
NEYA	No MEP, Yes Law	Yes
ENA	MEP, No Law	No
NENA	No MEP, No Law	Yes
PIF and LAW	**Scenario**	**Present**
PYA	PIF, Yes Law	Yes
NPYA	No PIF, Yes Law	Yes
PNA	PIF, No Law	Yes
NPNA	No PIF, No Law	Yes

Key: MASS = mass privatization; SALE = privatization through sales; MEP = Manager/employee privatization; PIF = privatization funds used in privatization; Yes Law = privatization law present at the time of privatization; No Law = privatization law not present at the time of privatization; Yes = scenario observed; No = scenario not observed.

Appendix E: Mean Analysis for CNTRL/LAW

CNTRL / LAW	Scenario	Present
PCYA	Positive CNTRL, Yes Law	Yes
PCNA	Positive CNTRL, No Law	No
ZCYA	Zero CNTRL, Yes Law	Yes
ZCNA	Zero CNTRL, No Law	No
NCYA	Negative CNTRL, Yes Law	Yes
NCNA	Negative CNTRL, No Law	Yes
WAGE / LAW	**Scenario**	**Present**
PWYA	Positive WAGE, Yes Law	Yes
PWNA	Positive WAGE, No Law	No
ZWYA	Zero WAGE, Yes Law	Yes
ZWNA	Zero WAGE, No Law	Yes
NWYA	Negative WAGE, Yes Law	Yes
NWNA	Negative WAGE, No Law	No
TRADE / LAW	**Scenario**	**Present**
PRYA	Positive TRADE, Yes Law	Yes
PRNA	Positive TRADE, No Law	No
ZRYA	Zero TRADE, Yes Law	Yes
ZRNA	Zero TRADE, No Law	Yes
NRYA	Negative TRADE, Yes Law	Yes
NRNA	Negative TRADE, No Law	Yes
FLOWS / LAW	**Scenario**	**Present**
PLYA	Positive FLOWS, Yes Law	Yes
PLNA	Positive FLOWS, No Law	No
ZLYA	Zero FLOWS, Yes Law	Yes
ZLNA	Zero FLOWS, No Law	Yes
NLYA	Negative FLOWS, Yes Law	Yes
NLNA	Negative FLOWS, No Law	No
FISCAL / LAW	**Scenario**	**Present**
PSYA	Positive FISCAL, Yes Law	Yes
PSNA	Positive FISCAL, No Law	No
ZSYA	Zero FISCAL, Yes Law	Yes
ZSNA	Zero FISCAL, No Law	No
NSYA	Negative FISCAL, Yes Law	Yes
NSNA	Negative FISCAL, No Law	Yes

Key: CNTRL = net change, since privatization, in all economic reforms, change in WAGE + change in TRADE + change in FLOWS + change in FISCAL; WAGE = change, since privatization, in Economic Freedom Indicator Wage and Price Controls; TRADE = change, since privatization, in Economic Freedom Indicator Trade; FLOWS = change, since privatization, in Economic Freedom Indicator Capital Flows; FISCAL = change, since privatization, in Economic Freedom Indicator Fiscal Burden; Yes Law = privatization law present at the time of privatization; No Law = privatization law not present at the time of privatization; Yes = scenario observed; No = scenario not observed.

Appendix F: Mean Analysis for PZ/CNTRL

MASS / CNTRL	**Scenario**	**Present**
MPC	Mass, Positive CNTRL	Yes
NMPC	No Mass, Positive CNTRL	No
MZC	Mass, Zero CNTRL	Yes
NMZC	No Mass, Zero CNTRL	Yes
MNC	Mass, Negative CNTRL	Yes
NMNC	No Mass, Negative CNTRL	Yes
SALE / CNTRL	**Scenario**	**Present**
SPC	Sale, Positive CNTRL	Yes
NSPC	No Sale, Positive CNTRL	Yes
SZC	Sale, Zero CNTRL	Yes
NSZC	No Sale, Zero CNTRL	Yes
SNC	Sale, Negative CNTRL	Yes
NSNC	No Sale, Negative CNTRL	Yes
MEP / CNTRL	**Scenario**	**Present**
EPC	MEP, Positive CNTRL	Yes
NEPC	No MEP, Positive CNTRL	Yes
EZC	MEP, Zero CNTRL	Yes
NEZC	No MEP, Zero CNTRL	No
ENC	MEP, Negative CNTRL	Yes
NENC	No MEP, Negative CNTRL	Yes
PIF / CNTRL	**Scenario**	**Present**
PPC	PIF, Positive CNTRL	Yes
NPPC	No PIF, Positive CNTRL	Yes
PZC	PIF, Zero CNTRL	Yes
NPZC	No PIF, Zero CNTRL	No
PNC	PIF, Negative CNTRL	Yes
NPNC	No PIF, Negative CNTRL	Yes
MASS / Controls	**Scenario**	**Present**
MPW	Mass, Positive WAGE	Yes
NMPW	No Mass, Positive WAGE	No
MZW	Mass, Zero WAGE	Yes
NMZW	No Mass, Zero WAGE	Yes
MNW	Mass, Negative WAGE	Yes
NMNW	No Mass, Negative WAGE	No
MPR	Mass, Positive TRADE	Yes
NMPR	No Mass, Positive TRADE	No
MZR	Mass, Zero TRADE	Yes
NMZR	No Mass, Zero TRADE	Yes
MNR	Mass, Negative TRADE	Yes
NMNR	No Mass, Negative TRADE	No
MPL	Mass, Positive FLOWS	Yes

NMPL	No Mass, Positive FLOWS	No
MZL	Mass, Zero FLOWS	Yes
NMZL	No Mass, Zero FLOWS	Yes
MNL	Mass, Negative FLOWS	Yes
NMZL	No Mass, Zero FLOWS	No
MPS	Mass, Positive FISCAL	Yes
NMPS	No Mass, Positive FISCAL	No
MZS	Mass, Zero FISCAL	Yes
NMZS	No Mass, Zero FISCAL	Yes
MNS	Mass, Negative FISCAL	Yes
NMNS	No Mass, Negative FISCAL	Yes
SALE / Controls	**Scenario**	**Present**
SPW	Sale, Positive WAGE	No
NSPW	No Sale, Positive WAGE	Yes
SZW	Sale, Zero WAGE	Yes
NSZW	No Sale, Zero WAGE	Yes
SNW	Sale, Negative WAGE	Yes
NSNW	No Sale, Negative WAGE	Yes
SPR	Sale, Positive TRADE	Yes
NSPR	No Sale, Positive TRADE	Yes
SZR	Sale, Zero TRADE	Yes
NSZR	No Sale, Zero TRADE	Yes
SNR	Sale, Negative TRADE	Yes
NSNR	No Sale, Negative TRADE	Yes
SPL	Sale, Positive FLOWS	Yes
NSPL	No Sale, Positive FLOWS	No
SZL	Sale, Zero FLOWS	Yes
NSZL	No Sale, Zero FLOWS	Yes
SNL	Sale, Negative FLOWS	Yes
NSZL	No Sale, Zero FLOWS	Yes
SPS	Sale, Positive FISCAL	Yes
NSPS	No Sale, Positive FISCAL	No
SZS	Sale, Zero FISCAL	Yes
NSZS	No Sale, Zero FISCAL	Yes
SNS	Sale, Negative FISCAL	Yes
NSNS	No Sale, Negative FISCAL	Yes
MEP / Controls	**Scenario**	**Present**
EPW	MEP, Positive WAGE	Yes
NEPW	No MEP, Positive WAGE	No
EZW	MEP, Zero WAGE	Yes
NEZW	No MEP, Zero WAGE	Yes
ENW	MEP, Negative WAGE	Yes
NENW	No MEP, Negative WAGE	Yes
EPR	MEP, Positive TRADE	Yes
NEPR	No MEP, Positive TRADE	Yes

EZR	MEP, Zero TRADE	Yes
NEZR	No MEP, Zero TRADE	Yes
ENR	MEP, Negative TRADE	Yes
NENR	No MEP, Negative TRADE	Yes
EPL	MEP, Positive FLOWS	Yes
NEPL	No MEP, Positive FLOWS	Yes
EZL	MEP, Zero FLOWS	Yes
NEZL	No MEP, Zero FLOWS	Yes
ENL	MEP, Negative FLOWS	Yes
NEZL	No MEP, Zero FLOWS	Yes
EPS	MEP, Positive FISCAL	Yes
NEPS	No MEP, Positive FISCAL	Yes
EZS	MEP, Zero FISCAL	Yes
NEZS	No MEP, Zero FISCAL	No
ENS	MEP, Negative FISCAL	Yes
NENS	No MEP, Negative FISCAL	Yes
PIF / Controls	**Scenario**	**Present**
PPW	PIF, Positive WAGE	Yes
NPPW	No PIF, Positive WAGE	No
PZW	PIF, Zero WAGE	Yes
NPZW	No PIF, Zero WAGE	Yes
PNW	PIF, Negative WAGE	Yes
NPNW	No PIF, Negative WAGE	Yes
PPR	PIF, Positive TRADE	Yes
NPPR	No PIF, Positive TRADE	Yes
PZR	PIF, Zero TRADE	Yes
NPZR	No PIF, Zero TRADE	Yes
PNR	PIF, Negative TRADE	Yes
NPNR	No PIF, Negative TRADE	Yes
PPL	PIF, Positive FLOWS	Yes
NPPL	No PIF, Positive FLOWS	No
PZL	PIF, Zero FLOWS	Yes
NPZL	No PIF, Zero FLOWS	Yes
PNL	PIF, Negative FLOWS	Yes
NPZL	No PIF, Zero FLOWS	Yes
PPS	PIF, Positive FISCAL	Yes
NPPS	No PIF, Positive FISCAL	Yes
PZS	PIF, Zero FISCAL	Yes
NPZS	No PIF, Zero FISCAL	Yes
PNS	PIF, Negative FISCAL	Yes
NPNS	No PIF, Negative FISCAL	Yes

Key: MASS = mass privatization, SALE = Privatization through sales, MEP = manager / employee privatization, PIF = privatization with privatization investment funds, CNTRL = net change, since privatization, in economic reforms; Controls = the following scenarios represent one type of privatization with each different type of economic reform; WAGE = change, since privatization, in Economic Freedom Indicator Wage and Price Controls; TRADE = change, since privatization, in Economic Freedom Indicator Trade; FLOWS = change, since privatization, in Economic Freedom Indicator Capital Flows; FISCAL = change, since privatization, in Economic Freedom Indicator Fiscal Burden; Yes = scenario observed, No = scenario not observed.

Appendix G: Date of privatization and the three post-years of privatization

Country	**Program Date**	**Three post-years**
Albania	1995	1996-1998
Armenia	1994	1995-1997
Azerbaijan	1997	1998-2000
Belarus	1995	1996-1998
Bosnia-Herzegovina	2000	2001-2003
Bulgaria	1995	1996-1998
Croatia	1998	1999-2001
Czech Republic	1992	1993-1995
Estonia	1993	1994-1996
Georgia	1995	1996-1998
Hungary	1991	1992-1994
Kazakhstan	1994	1995-1997
Kyrgyz Republic	1994	1995-1997
Latvia	1994	1995-1997
Lithuania	1991	1992-1994
Macedonia	1996	1997-1999
Moldova	1994	1995-1997
Poland	1995	1996-1998
Romania	1992	1993-1995
Russia	1992	1993-1995
Slovak Republic	1992	1993-1995
Slovenia	1994	1995-1997
Tajikistan	1997	1998-2000
Turkmenistan	1998	1999-2001
Ukraine	1995	1996-1998
Uzbekistan	1996	1997-1999

Appendix H: Results of Analyses for Success Variables

Black Markets	PZTYPE	- and ∅ mean Δ for most. ⊕ mean Δs seems to be associated with no PIF and MASS. ∅ mean Δs seem to be associated with no MEP and No Mass.
	PZ/LAW	No law ⇒ ∅ mean Δ The rest have ⊕ mean Δs.
	CNTRL/LAW	Less restrictions ⇒ increased BLKMKT More restrictions ⇒ decreased BLKMKT No law ⇒ no change in BLKMKT Only exception: Less restricted FLOWS ⇒ decreased BLKMKT
	PZ/CNTRL	Restrictions on controls ⇒ reduction in BLMKT Less restrictions on controls ⇒ increase in BLKMKT ∅ Δ in controls ⇒ ∅ Δ in BLKMKT
Regulation	PZTYPE	∅ and ⊕ mean Δs in REGLN. Mass and MEP privatization appear to cause the highest rate of ⊕ mean Δs. Sale appears to cause mostly ∅ mean Δs.
	PZ/LAW	No law ⇒ ∅ mean Δ The rest are ⊕ mean Δs.
	CNTRL/LAW	All mean Δs either ⊕ or ∅. Law in place ⇒ ⊕ mean Δ No law in place ⇒ ∅ mean Δ
	PZ/CNTRL	Privatization itself leads to more REGLN, despite CNTRLS, or at least a ∅ change in REGLN.
Fertility Rate	PZTYPE	All – mean Δs for FERTILE.
	PZ/LAW	All – mean Δs for FERTILE.
	CNTRL/LAW	For all iterations ⇒ - mean Δ Δs in economy cause uncertainty, fertility rate decreases.
	PZ/CNTRL	All – mean Δs. Are more negative -.17 --.20, for ∅ change in CNTRL.
GDP	PZTYPE	Most ⊕ and relatively low, except for NME and NMP at -.000059. (Uzbekistan) The highest ⊕ mean Δ for more than 1 obs. Was .0647, with 7 obs. for no MEP and PIF. (NEP)
	PZ/LAW	All ⊕ mean Δs, except for NMYA -.000059 (Uzbekistan).
	CNTRL/LAW	Most ⊕ mean Δs, except for: ∅ CNTRL, yes law ⊕ trade, yes law - flows, yes law

		⊕ fiscal, yes law Overall, no improvement in economic policy after PZ, leads to – mean Δ in GDP Restrictions on trade ⇒ - mean Δ in GDP Improvement in flows ⇒ - mean Δ in GDP Increased Fiscal spending and taxes ⇒ - mean Δ in GDP
	PZ/CNTRL	⊕ and ∅ CNTRL ⇒ - mean Δ GDP, despite the type of PZ, or lack of it. The rest of the cases have ⊕ mean Δs.
Market Capitalization	PZTYPE	Most are ⊕ mean Δs, except for 5 – mean Δs and 1 ∅ mean change. No sale ⇒ decreases in MKTCAP MEP ⇒ decreases in MKTCAP
	PZ/LAW	All ⊕ and relatively high mean Δs, except for NSYA -.220 and EYA -.049. No sale and MEP seem to have a negative effect on MKTCAP.
	CNTRL/LAW	Most countries have relatively high and ⊕ mean Δs after PZ, except for : - mean Δ for no change in trade, yes law ∅ mean Δ for restrictions on prices, yes law
	PZ/CNTRL	Most cases have ⊕ mean Δs. However, No Sale and MEP tend to lead to either – or ∅ mean Δs in MKTCAP. ∅ Δ in CNTRL ⇒ ∅ mean Δ in MKTCAP
Mobile Phones	PZTYPE	⊕ and relatively high mean Δs for all cases.
	PZ/LAW	All ⊕ and relatively high.
	CNTRL/LAW	⊕ and relatively high mean Δs in all cases
	PZ/CNTRL	⊕ and relatively high mean Δs in all cases.
Mortality Rate, < 5	PZTYPE	- mean Δs for all cases MORT<5 falls less than .10 for 7 cases. No Sale ⇒ less decrease in mortality
	PZ/LAW	- mean Δs for all cases. No Sale ⇒ less decrease in mortality.
	CNTRL/LAW	All cases have – mean Δs. The two most negative Δs are for ∅ CNTRL (ZCYA) and ∅ flows (ZSYA). The highest – mean Δs are (>-.10) are for NCYA, NWYA, PLYA, PSYA.
	PZ/CNTRL	All – mean Δs.
Official development aid	PZTYPE	Most countries have – mean Δs, except for 8. Types of PZ seem to conflict one another, mass and no mass, no MEP and MEP. The only two types of PZ consistent with increases in aid tend to be Sale and PIF.
	PZ/LAW	No law ⇒ increase in Aid. Most cases have – mean Δs.
	CNTRL/LAW	Aid decreases with improvements in CNTRL. More restrictions, No net Δ, no law ⇒ increases in

		Aid.
	PZ/CNTRL	Despite the type of PZ, $\oplus$ and $\varnothing$ CNTRL $\Rightarrow$ $\oplus$ mean Δ in OFFAID The rest have – mean Δs.
Radios	PZTYPE	All $\oplus$ and relatively low mean Δs, except for 1 – mean Δ. NSNE -.00203. (No sale, no MEP)
	PZ/LAW	Most $\oplus$ and relatively low mean Δs, except for Mass, no law and PIF, no law. No law $\Rightarrow$ - mean Δs
	CNTRL/LAW	Relatively low and $\oplus$ for all cases, except - mean Δ for NRNA and NSNA.
	PZ/CNTRL	Most are low $\oplus$ mean Δs. One – mean Δ, NSPC (Albania). Highest $\oplus$ mean Δ of .29443 no PIF, $\oplus$ CNTRL (country 7)
Roads, goods transported	PZTYPE	No mass $\Rightarrow$ - mean Δ in GOODS PIF $\Rightarrow$ - mean Δ in GOODS No Sale $\Rightarrow$ $\oplus$ mean Δ in GOODS Most obs for Mass and Sale (13) $\Rightarrow$ - mean Δ
	PZ/LAW	No law $\Rightarrow$ - mean Δs in GOODS.
	CNTRL/LAW	Restrictions concerning reforms $\Rightarrow$ mean Δs in GOODS, except for restrictions on capital flows (PLYA = -.0297). For no law countries, - mean Δ of .34 or lower to .661. For general CNTRL cases, GOODS increase with restrictions, and decrease with $\varnothing$ or – mean Δ.
	PZ/CNTRL	Despite type of PZ, $\varnothing$ or – CNTRL $\Rightarrow$ - mean Δ in GOODS. Changing old pathways of doing business.
Roads, paved %	PZTYPE	- mean Δ for No Sale, PIF (-.0108) $\varnothing$ mean Δ are the most affiliated with No Mass. The rest have low but $\oplus$ mean Δs.
	PZ/LAW	Either $\varnothing$ or very low $\oplus$ mean Δs.
	CNTRL/LAW	All $\oplus$ and relatively low mean Δs, except for PWYA is -.0334. For general controls, Restrictions on reforms increased paved roads, $\varnothing$ or – movement in reforms resulted in very low $\oplus$, almost $\varnothing$.
	PZ/CNTRL	All $\oplus$ or $\varnothing$. All $\oplus$ very close to $\varnothing$.
Stocks traded, value	PZTYPE	- mean Δ seems to be the most linked to MEP, lesser so to no MASS and SALE $\varnothing$ mean Δ is the most linked to no Sale.
	PZ/LAW	Most $\oplus$ mean Δs, except for three cases: No mass, law; MEP, law; PIF, law.
	CNTRL/LAW	Restrictions on reforms or net $\varnothing$ Δ $\Rightarrow$ - impact on STKVAL Less restrictions, regardless of law $\Rightarrow$ $\oplus$ mean Δ

		in STKVAL Restrictions on trade ⇒ - mean Δ in STKVAL Zero Δ in flows ⇒ - mean Δ in STKVAL Zero Δ in fiscal⇒ - mean Δ in STKVAL
	PZ/CNTRL	Despite type of PZ, ⊕ or ∅ CNTRL ⇒ - or ∅ Δ in STKVAL
Telephone lines	PZTYPE	All ⊕ mean Δ, except for two No Mass obs. NME and NMP.
	PZ/LAW	Most ⊕ mean Δs, except for 3 cases of – mean Δs: NMYA, MNA, and PNA.
	CNTRL/LAW	For general CNTRL, all ⊕ mean Δs. The rest are ⊕ except for NWYA -.03538 and NRNA-.10650.
	PZ/CNTRL	Most have ⊕ mean Δs, except for one – mean Δ, -.033106 for Sale, ∅ CNTRL.
Telephone waiting time	PZTYPE	All – mean Δs, except for 5 cases. (∅ mean Δ) No Mass seems to be strongly linked with ∅ mean Δ.
	PZ/LAW	No law ⇒ ∅ mean Δ. The rest have – mean Δs.
	CNTRL/LAW	- or ∅ mean Δ for all cases. All no law have ∅ mean Δ. Waiting time decreases at a higher rate for those countries with a net ⊕ movement in CNTRL. (more restrictions on reforms.)
	PZ/CNTRL	Despite type of PZ, Largest – mean Δs ⇒ ⊕ CNTRL ∅ mean Δs ⇒ ∅ CNTRL Most have – mean Δs.
	Key: PZTYPE = mean analysis for different privatization types; PZ/LAW = mean analysis for privatization type and the presence of privatization law at the time of privatization; CNTRL/LAW = mean analysis for economic reforms and the presence for privatization law at the time of privatization; PZ/CNTRL = mean analysis for privatization type and economic reforms; ∅ = zero, ⊕ = positive; - = negative; Δ = change; WAGE = wage and price controls; TRADE = foreign trade; FLOWS = capital flows and foreign investment; FISCAL = fiscal policy; BLKMKT = black markets; REGLN = regulation; FERTILE = fertility rate; GDP = Gross Domestic Product; MKTCAP = market capitalization; MORT<5 = mortality rate, < 5; OFFAID = official development assistance; GOODS = Roads, goods transported; PAVED = Roads, paved %; STKVAL = stocks traded, value.	

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