Journal of Comparative Economics 43 (2015) 274–289

Contents lists available at ScienceDirect

Journal of Comparative Economics

journal homepage: www.elsevier.com/locate/jce

# Asset stripping and firm survival in mass privatization: Testing the Hoff-Stiglitz and Campos-Giovannoni models in Montenegro

Matjaž Koman [a], Milan Lakićević [b], Janez Prašnikar [a,c], Jan Svejnar [a,c,d,e,f,*]

[a] University of Ljubljana, Institute for South-East Europe, Kardeljeva ploščad 17, 1000 Ljubljana, Slovenia
[b] University of Montenegro, Jovana Tomaševića 37, 81000 Podgorica, Montenegro
[c] CEPR, London, UK
[d] School of International and Public Affairs, Columbia University, 420 West 118th Street, MC 3328, New York, NY 10027, USA
[e] IZA, Bonn, Germany
[f] CERGE-EI, Prague, Czech Republic

A R T I C L E I N F O

*Article history:*
Received 13 November 2013
Revised 23 October 2014
Available online 8 November 2014

*JEL classification:*
L33
P24
P31

*Keywords:*
Asset stripping
Mass privatization
Firm survival
Selection bias

A B S T R A C T

**Koman, Matjaž, Lakićević, Milan, Prašnikar, Janez, and Svejnar, Jan**—Asset stripping and firm survival in mass privatization: Testing the Hoff-Stiglitz and Campos-Giovannoni models in Montenegro

We provide the first test of and find support for the Hoff and Stiglitz (2004a,b) model predicting under what conditions mass privatizations are accompanied by asset stripping. We also test and do not find support for the main prediction of the Campos and Giovannoni (2006) model. In addition to testing the theory, we tackle an important policy-oriented issue of why a large number of efficient firms disappeared during mass privatization in the booming economy of Montenegro. Econometrically, we present the first study to look at firms that disappeared during a mass privatization transition, improving upon prior studies that focused only on existing firms and ignored survival bias. Our analysis suggests that asset stripping and firm disappearance were present, and that asset stripping was a likely reason for the loss of efficient firms. We show that because more productive firms were liquidated, it is important to model survival bias in the selection of firms remaining in samples when estimating the effects of privatization or other ownership changes. We also show that one needs to distinguish between true start-ups and liquidated firms that re-appear as start-ups. In the absence of the rule of law, many firms that appear to have disappeared were in fact appropriated by managers and politically connected individuals. *Journal of Comparative Economics* **43** (2) (2015) 274–289. University of Ljubljana, Institute for South-East Europe, Kardeljeva ploščad 17, 1000 Ljubljana, Slovenia; University of Montenegro, Jovana Tomaševića 37, 81000 Podgorica, Montenegro; CEPR, London, UK; Columbia University, 420 West 118th Street, 1401 International Affairs, MC 3328, New York, NY 10027, USA; IZA, Bonn, Germany; CERGE-EI, Prague, Czech Republic.


* Corresponding author at: School of International and Public Affairs, Columbia University, 420 West 118th Street, MC 3328, New York, NY 10027, USA. Fax: +1 212 854 1229.

*E-mail address:* svejnar@columbia.edu (J. Svejnar).

http://dx.doi.org/10.1016/j.jce.2014.10.006
0147-5967/

## 1. Introduction

Privatization of state-owned firms has been a key feature of the transition from communism to capitalism, and from the outset the general expectation was that privatization would improve the performance of firms and thus also the transition economies. The early surveys of privatization in transition economies showed positive or mixed results.[1] The most recent survey by Estrin et al. (2009) indicates, however, that while privatization to foreign owners has a positive effect on firm performance, privatization to domestic owners has a much less positive effect in Central and East Europe, and that the effect is on average zero or even negative in the Commonwealth of Independent States (CIS). In order to understand this limited or even nonexistent positive performance effects of privatization, we examine a leading explanation, namely that managers respond to mass privatization by stripping enterprise assets.

A striking characteristics of Montenegro, a former Yugoslav country, were that each privatization attempt resulted in the failure of large number of firms. We cast our analysis in the context of Hoff and Stiglitz (2004a,b) and Campos and Giovannoni (2006) theoretical models, and use firm-level data from Montenegro to show that many managers and politically connected individuals responded to mass privatization in the absence of the rule of law by stripping assets, rather than building value, and that they were more likely to do so in more productive than less productive firms and in smaller (less visible) than in larger firms.

Hoff and Stiglitz (2004a,b) develop the first model of asset stripping and identify conditions under which asset stripping may be observed. Yet, despite the importance of the Hoff–Stiglitz model, there has been no formal empirical test of its predictions. Campos and Giovannoni (2006) develop a second model of asset stripping and econometrically test their model's predictions. Campos and Giovannoni (2006) are handicapped, however, in that they do not have information about state-owned enterprises – i.e., about firms whose assets were presumably stripped. In the absence of this direct information, the authors infer the extent of asset stripping from an answer provided by general managers of new start-up firms. In particular, they use as their proxy for an asset stripping variable the answer that these managers provided to the question: "How much of your capital equipment came from state enterprises which helped found this firm?" This approach is ingenious but obviously rough. The key problem is that the capital equipment in question might or might not have been stripped from the state enterprises. Moreover, the question is excessively narrow because asset stripping includes items other than just equipment – e.g., profit, raw materials, and semi-finished and finished goods. The issue remains as to what extent this indirect measure reflects actual asset stripping.

The state of the literature is therefore such that there is a relatively rough test of the Campos and Giovannoni theoretical model and, to the best of our knowledge, no formal test of the predictions of the Hoff–Stiglitz theoretical model.

In this paper, we contribute to the literature by testing directly the two key predictions of the Hoff–Stiglitz model with respect to asset stripping and a key prediction of the Campos–Giovannoni model. In addition, we address a twin policy-oriented puzzle: the disappearance of a large number of originally state-owned firms during mass privatization, despite a rapidly growing economy.

To carry out our analysis, we collected a unique dataset of all 225 firms in Montenegro that went through mass voucher privatization beginning in 2001. A particularly interesting feature of our data set from the standpoint of possible asset stripping is that during this period Montenegro may be characterized as having had a weak rule of law (Jovović and Karadžić, 2008) and while the total number of firms in the country was growing, the total number of firms in our sample decreased markedly. Almost one-half of the 225 firms going through privatization went bankrupt or were liquidated, often reappearing as private firms with influential managers or politically linked individuals as new owners. From the limited literature on this issue (e.g., Gregurek, 2001; Gregorič, 2002; Cerović and Dragutinović Mitrović, 2007; Koman and Hadži Vasileva-Markovska, 2007; Koman et al., 2011) it appears that this aspect of managerial behavior was quite common in the other republics of former Yugoslavia as well.[2]

We are able to infer the presence of asset striping from the characteristics of the firms that survived mass privatization vs. those that did not.[3] The main finding is that more productive firms and the smaller firms were also the firms that were more likely to go bankrupt or be liquidated.[4] We can explain this in terms of Hoff–Stiglitz model and infer that the mass privatization lead to mass asset stripping. This finding also points to the need to model the endogenous exit of firms when one estimates the effects of privatization on firm performance. Our results also indicate that one needs to distinguish between true start-ups and liquidated firms that re-appear as *de novo* (start-up) firms. Our estimates do not provide support for the Campos–Giovannoni predictions that firms with medium productivity will be stripped more than firms with low or high productivity.

[1] The earlier studies are reviewed for instance in Megginson and Netter (2001) and Djankov and Murrell (2002). They vary from finding no systematic performance effect (Bevan et al., 1999) to noting that a positive effect probably dominates (Megginson and Netter, 2001), to concluding that the overall effect is positive (Carlin et al., 2001; Djankov and Murrell, 2002; Shirley and Walsh, 2000).

[2] This includes, Montenegro, Macedonia, BIH, Croatia and Serbia. The Slovenian situation was different in that the process of management buy-outs escalated only before the global Great Recession (see, for example, Prašnikar and Svejnar (2007), Domadenik et al. (2008) and Bole et al. (2012, 2014).

[3] We are hence able to use a more direct approach than Campos and Giovannoni (2006).

[4] This phenomenon could be observed in many transition economies. However, the more decentralized characteristic of the Yugoslav economy before privatization gave managers more information about their firm and its environment, which they used in the process of privatization. As a result the appropriation from management was common in the countries of former Yugolsavia.