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Data Watch
Research Data from Transition Economies

Randall K. Filer and Jan Hanousek

This section will offer a description of data sources that may be of interest to economists. The purpose is to describe what data are available from those sources, what questions can be addressed because of the unique features of the data, and how an interested reader can gain access to the data. Suggestions for data sources that might be discussed here (or comments on past columns) can be sent to William N. Evans, c/o Data Watch, University of Maryland, Department of Economics, College Park, Maryland 20742, or they can be e-mailed to ⟨evans@econ.umd.edu⟩.

Introduction

Ten years into the transition from communism in the countries of the former Soviet Union and central and eastern Europe, a cursory search of the EconLit database turns up hundreds of empirical studies published in refereed journals that deal with various issues in transition economies. Even so, we suspect that many economists are prevented from making full use of the possibilities offered by the transition by the difficulties of obtaining and interpreting data from the region. The purpose of this brief essay is to indicate some possible sources for data that can be used for economic analysis, as well as some cautions regarding the use of these

■ *Randall K. Filer is Professor of Economics, Hunter College and the Graduate Center, City University of New York, both in New York City, New York, and CERGE-EI, a joint workplace of Charles University and Academy of Sciences of the Czech Republic, Prague, Czech Republic. Jan Hanousek is Citibank Associate Professor of Economics, CERGE-EI, Prague, Czech Republic. Both Filer and Hanousek are Research Associates of the William Davidson Institute, Ann Arbor, Michigan. Their e-mail addresses are ⟨rfiler@hunter.cuny.edu⟩ and ⟨jan.hanousek@cerge-ei.cz⟩, respectively.*

data. Many transition countries have been rapidly reforming and increasing the capabilities of their statistical offices. The information in this essay is as accurate as we can make it, but in a region that is changing as rapidly as the transition economies, information can become outdated rapidly. We will endeavor to provide updated information as it becomes known to us at ⟨http://home.cerge-ei.cz/hanousek/transition_data/⟩.

When discussing each type of data, we present an illustrative list of some recent works that have used these data. These references are far from exhaustive and are meant to give a general idea of topics analyzed and economists using data from transition economies. The vast majority of studies of transition economies have been conducted by experts on the transition and focus on issues of the transition. We hope that by making it easier to access data from the postcommunist countries, this essay will encourage economists who are not specialists in the region to begin to use the tremendous possibilities of this once-in-a-lifetime series of natural experiments to address fundamental questions in economics.

Macroeconomic Data

There is now little difficulty in obtaining macroeconomic data from throughout the region. Annual data are contained in the *World Development Indicators* from the World Bank, the *Transition Report* (and its supplement) from the European Bank for Reconstruction and Development and many other sources. Quarterly and monthly data are readily available from the statistical office and central bank websites for almost all countries in the region listed in Table 1.

Problems with respect to macroeconomic data occur not in obtaining these data but in using them intelligently. The sources, coverage and quality of macroeconomic data in transition economies have varied dramatically over the past decade. At the start of transition, for example, the only widely available employment and output figures were taken from firm reports to national statistical offices. These offices were set up to deal with massive communist enterprises, but they were inherently incapable of capturing the thousands of small firms that sprung up with transition, especially since these firms had substantial incentives to operate under the radar of tax and regulatory authorities. In the Czech Republic, for example, enterprise data at the start of the transition officially covered only firms with more than 100 workers, a figure that was gradually lowered to 50 and then 25 as the transition progressed. Unemployment figures were almost universally based on the number of people who registered for unemployment benefits, which was highly influenced by the generosity of the nation's unemployment insurance system. Over time, as more and more countries introduced standard labor force surveys and improved their tax and audit offices, the ability of official organs to capture economic activity improved considerably.[1] Åslund (2001) and Bartholdy (1997) provide summaries of the problems with output measurement during transition,

[1] The date at which one might have reasonable confidence in the quality of any given data is highly variable across countries and data sets. In addition, some aspects of any given data may have become

Table 1
Statistical Office and Central Bank Information Locations

	Statistical Office	*Central Bank*
Albania	http://www.instat.gov.al/english	http://www.bankofalbania.org/
Armenia	http://www.armstat.am/	http://www.cba.am/
Azerbaijan	http://www.azeri.com/goscomstat/	http://www.bankofbaku.com/
Belarus	http://president.gov.by/Minstat/en/main.html	http://www.nbrb.by/engl/
Bosnia and Herzegovina		http://www.cba.am/
Bulgaria	http://www.nsi.bg/	http://www.bnb.bg/
Croatia	http://www.dzs.hr/	http://www.hnb.hr/
Czech Republic	http://www.czso.cz/	http://www.cnb.cz/
Estonia	http://www.stat.ee/	http://www.ee/epbe/
FR Yugoslavia	http://www.szs.sv.gov.yu/homee.htm	http://www.mfa.gov.yu/Facts/institutions/nbj_e.html
FYR Macedonia	http://www.stat.gov.mk/	http://www.nbrm.gov.mk/
Georgia	http://www.cisstat.com/eng/georg.htm	http://www.nbg.gov.ge/
Hungary	http://www.ksh.hu/pls/ksh/docs/index_eng.html	http://www.mnb.hu/
Kazakhstan	http://www.kazstat.asdc.kz/	http://www.nationalbank.kz/
Kyrgyzstan	http://stat-gvc.bishkek.su/	http://www.nbkr.kg/web/interfeis.builder_frame?language=ENG
Latvia	http://www.csb.lv/	http://www.bank.lv/
Lithuania	http://www.std.lt/	http://www.lbank.lt/
Moldova	http://www.moldova.md/index_en.html	http://www.bnm.org/index1.html
Poland	http://www.stat.gov.pl/english/index.htm	http://www.nbp.pl/
Romania	http://www.insse.ro/indexe.htm	http://www.bnro.ro/def_en.htm
Russia	http://www.gks.ru/default.asp	http://www.cbr.ru/eng/
Slovakia	http://www.statistics.sk/webdata/english/index2_a.htm	http://www.nbs.sk/
Slovenia	http://www.sigov.si/zrs/	http://www.bsi.si/
Tajikistan	no web. telephone 7-3772-276882 fax 7-3772-275408	
Turkmenistan	no web. telephone 993-12-94265	
Ukraine	http://www.ukrstat.gov.ua/	http://www.bank.gov.ua/
Uzbekistan	http://www.gov.uz/government/minmacro/index.html	

while Filer and Hanousek (2000) argue that inflation measures are notably unreliable in a transition context.

Many researchers have used data from the region as if their coverage and quality were constant across the past decade, despite the massive evidence to the contrary.[2] These differences and changes over time in the data call into question

reliable earlier than other aspects of the same collection effort. There is no way to avoid a systematic evaluation of the reliability of each individual data set in the context of each actual or proposed use.

[2] A more subtle problem is that almost every researcher has assumed that coefficients of models are constant across countries at different stages in the transition or at different points in a given country's evolution from planned to market economy, even though the transition economies have changed so dramatically that this assumption may be untenable in many cases.

almost all cross-country comparisons based on official aggregate data. Indeed, they call into serious question the seemingly obligatory graph of trends in employment or output since 1989 that forms a part of many papers dealing with the transition. Given the wide availability and questionable nature of aggregate macroeconomic data, the remainder of this essay will focus on the microeconomic data sets that are increasingly becoming available across the region.

Microeconomic Data

There are serious problems of access to microeconomic data on individuals and firms from the transition economies. The concept of free (or marginal cost) access for scholars to publicly collected data is only slowly penetrating the region. Many government statistical offices, constantly strapped for cash, see presumably rich western academics as a source of budget enhancement. Rather than establish price lists for access to various data sets, offices appear to be acting as sophisticated price discriminators, negotiating widely variable prices based on presumed willingness to pay. (Indeed, in preparing this article, we were quoted "prices" by some statistical offices for answering basic questions regarding sample size and variable definitions.) This practice has led many researchers to obtain data through various unofficial back channels where costs can be considerably lower. The obvious disadvantage to such a procedure is that the reader is dependent on the reputation of the author to ensure that the data are reliable and available for replication.[3] In general, however, all of the data discussed below can be obtained by researchers willing to make the effort to do so.

Household Surveys

Many countries in the region conduct regular labor force surveys. Information as to the design and coverage of these surveys is summarized in Table 2, while access can be obtained from the statistical offices listed in Table 1. These surveys have been used to study labor mobility (Lehmann and Wadsworth, 2000; Sorm and Terrell, 2000; Boeri and Flinn, 1999); unemployment duration (Lubyova and van Ours, 1999; Lehmann and Wadsworth, 1997); wage differentials (Adamchik and Bedi, 2000; Gimpelson and Lippoldt, 1999; Kroncke and Smith, 1999); and wage arrears (Lehmann, Wadsworth and Acquisti, 1999).

By far the most research has been done using the Polish Labor Force Survey. This probably reflects the fact that Poland has one of the few labor force surveys in the region that collects wage data. Thus, researchers interested in earnings and incomes, especially in a comparative context, have been forced to turn to other data sources. Primary among these are Household Budget Surveys, similar to the U.S. Consumer Expenditure Surveys, that have been conducted in many countries in the region on a regular (usually annual) basis since well before the collapse of

[3] One notable exception is the Czech Statistical Office, which has established a secure off-site server at CERGE-EI in Prague, similar to the U.S. Census Data Centers, where any recognized scholar can obtain access to the main data sets after executing appropriate confidentiality agreements.

Table 2
Labor Force Surveys in Transition Economies

	Title of the Survey	*Frequency*	*Inception Date*	*Approximate Sample Size*
Armenia	Sample Survey of Labour Force	semiannual	1999	before 2000, 1,075 households, after 3,600
Bulgaria	Labor Force Survey (LFS)	annual	9/93	30,000 households
Czech Republic	Labor Force Sample Survey (LFSS)	quarterly	12/92	24,000 dwellings 67,000 persons
Estonia	Estonia Labour Force Survey	continuous, quarterly reporting	1995, (1989–1994 collected in 1995)	2,200 households
Hungary	Labor Force Survey (LFS)	quarterly	1992	prior to 1998, 27,000 households, 1998 and later, 32,000 households
Latvia	Labour Force Survey	semiannual	1995	8,000 households
Lithuania	Sample Survey on Employment and Unemployment (SSEU)	quarterly	4/94	5,000 households
Lithuania	Labour Force Survey	semiannual	1994	8,000 individuals
Poland	Current Labor Force Survey (CLFS)	quarterly	5/92	5,725 housing units
Romania	Household Labor Force Sample Survey (HLFSS/AMIGO)	annual	3/94	15,000 dwelling units
Russia	Population Sample Survey of Employment (PSSE)	annual	10/92	0.6% of the population
Slovakia	Selective Registers of the Labour Force (VSPS)	quarterly	12/92	10,000 dwelling units
Slovakia	Labour Force Survey	quarterly	1993	10,250 dwelling units
Slovenia	Labor Force Survey	continuous, quarterly reporting	5/93	6,000 households
Ukraine	Labor Force Survey	quarterly	1/99	13% of population

communism. The quality of these surveys prior to 1989 appears to vary greatly across the region, with those in central Europe (including Bulgaria, Czechoslovakia, Hungary and Poland) being regarded as generally of reasonable quality, while those in the former Soviet Union have been questioned with respect to their representativeness and data quality (Atkinson and Micklewright, 1992).

In addition, many countries in the region have participated in the World Bank's series of Living Standards Measurement Surveys (LSMS), which provides occasional (and, in the case of Russia, frequent) representative sample surveys that provide in-depth information on household finances and living conditions. A summary of the available household budget surveys and LSMS data availability appears in Table 3. Further information on the LSMS project is available at ⟨http://www.worldbank.org/lsms/⟩. Access to household budget surveys must generally be obtained through the local statistical office, while LSMS data may generally be obtained through the World Bank's website, although for some countries, permission must be obtained before the data can be accessed.

Table 3
Household Surveys in Transition Countries

Country	*Survey*	*Approximate Size*	*Years*
Albania	Employment and Welfare Survey	1,500	1996
	Urban Household Survey	500	1996
	Tirana Household Expenditure Survey	3,180	1993–1994
Armenia	Armenian Household Living Standards Survey	4,920	1996
	Household Budget Survey (HBS)	5,000	1996
	Rural Pilot Household Survey	1,200	1994
	Urban Pilot Household Survey	2,100	1994
Azerbaijan	Azerbaijan Living Standards	2,000	1995
Belarus	Income and Expenditure Survey	5,000	annual since 1995
	Family Budget Survey		1991–1994
Bosnia and Herzegovina	CIET Assessment for the Cash Benefit Program	7,000	1997
Bulgaria	Household Budget Survey, multiple rounds	6,000	annual since pre-1989
	Bulgarian Integrated Household Survey (BIHS)	2,000	1997, 95
Croatia	Household Budget Survey	3,100	1998
Czech Republic	Household Budget Survey		annual since pre-1989
Estonia	Household Income and Expenditure Survey	2,500	since 1995
	Family Budget Survey		1992–1Q 1995
FYR, Macedonia	Household Budget Survey (HBS)	1,000	1991–1997
Georgia	Survey of Georgian Households	3,350	1997
Hungary	Household Budget Survey	8,000	biannual since pre-1989
	Household Panel Survey	2,000	1992–1994
Kazakhstan	Family Budget Survey, multiple rounds		annual
	Kazakhstan Living Standards Survey	2,000	1996
Kyrgyz Republic	Poverty Monitoring Survey	2,000	1996–1998, 1993
Latvia	Household Budget Survey	8,000	repeated since 1995
Lithuania	Household Survey	10,670	1996
Moldova	Moldova Household Budget Survey	1,500	1996–1999
Poland	Household Budget Survey, multiple rounds	32,000	annual since pre-1989
Romania	Integrated Household Survey	31,000	1994, 1997
	Family Budget Survey	9,000	1989
Russian Federation	Russian Longitudinal Monitoring Survey, rounds 5–8	varies	1994–1998
	Russian Longitudinal Monitoring Survey, rounds 1–4	varies	1992–1994
Slovak Republic	Family Budget Survey	2,000	annual since pre-1989
Slovenia	Household Budget Survey		multiple rounds since 1993
Tajikistan	Tajikistan Living Standards Survey	2,000	1999
Turkmenistan	Living Standards Measurement Survey	2,300	1998
	Living Conditions Survey	2,000	1997
Ukraine	Household Incomes and Expenditures in Ukraine	2,300	since 1995
Uzbekistan	Family Budget Survey		since 1985

Source: World Development Indicators, 2000.

Household budget surveys have been used to analyze income inequality (Kattuman and Redmond, 2001; Wilder, Benedict and Viies, 1999; Newberry, 1995); social safety nets (Liberati, 2001); poverty (Pentaraki and Mergos, 1999); welfare of specific subgroups of the population (Hancock and Pudney, 1997); nutrition and food demand (Miquel and Laisney, 2001); savings behavior (Kim, 1997); and demand for specific items (Skafar, 1998).

The series of Living Standards Measurement Surveys have been used to analyze a wide variety of economic phenomena. Most of this work has used the Russian Longitudinal Monitoring Survey, perhaps because of intrinsic interest in Russia, but also because of the ease of access and at least somewhat longitudinal nature of these data.[4] A partial list of publications using LSMS data include studies of inequality (Commander, Tolstopiatenko and Yemtsov, 1999; Brainerd, 1998); poverty and coping strategies (Anderson and Pomfret, 2000; Lokshin and Ravallion, 2000); savings behavior (Gregory, Mokhtari and Schrettl, 1999); occupational choice (Verme, 2000); gender wage gaps (Ogloblin, 1999; Reilly, 1999); and demographic changes (Zahoori et al., 1998).[5]

Census data in transition economies typically contain too little information to be of much use to researchers. Many countries, however, conduct extensive sample surveys called "microcensuses" approximately every five years. These surveys are roughly equivalent to the U.S. Public Use Micro Sample (the long-form subsample) in terms of coverage and questions asked and, in particular, contain much more detailed income data than other regional sources, as well as household composition and living standards measures. These data sets appear to be relatively underexploited by economists, although they have been used by, for example, Scherbov and van Vianen (1999) and Flanagan (1998). They offer interesting possibilities for future research.

Researchers have also taken advantage of the low costs of operating in transition economies to collect project-specific data. Several papers have resulted from the Social Stratification Surveys sponsored by the National Science Foundation in six countries in 1993 and 1994 (information at ⟨http://www.sscnet.ucla.edu/issr/da/SSEE/SSEE.home.html⟩) or from various modules of the cross-national International Social Survey Programme (ISSP—known as the General Social Survey in the United States). Information about the ISSP is available at ⟨http://www.issp.org/⟩, while a detailed description of participating countries and data collected is available at ⟨http://www.gesis.org/en/data_service/issp/data/list_quest_pdf.htm⟩. In addition, conventional market research survey firms have been established throughout the region. These firms provide another opportunity for scholars, who can find it highly cost-effective to add study-specific questions to ongoing random

[4] These data are based on a sample of dwelling units, which gives them some longitudinal context depending on how often people move. Naturally, the longitudinal angle will be less applicable if there is high household mobility, something that will become more of a problem as the transition progresses.
[5] A great deal of additional work has been done using the East German subsample of the German Socio-Economic Panel (GSOEP) data. We have ignored East German data sets in this essay since they are by now well integrated into the research community and heavily influenced by the unique situation of German reunification.

population surveys. As an example, we recently asked two questions of a random sample of 1,500 Romanian households and received responses along with complete income and demographic data for approximately $500 (Filer and Hanousek, 2001). Similarly, a budget of less than $2,000 was sufficient for a graduate student to conduct an extensive survey of emigration and remittances in 1,000 Albanian households (Konica and Filer, 2001). Original surveys are feasible with modest support in even the most developed transition economies. Thus, a budget of around $35,000 was sufficient to obtain detailed retrospective work histories for 5,000 Czech adults in 3,000 households (Jurajda and Terrell, 2001). While we do not want to endorse any particular commercial enterprise, a list of the addresses and other contact information of firms for which we have at least some indication of reliability is available at ⟨http://home.cerge-ei.cz/hanousek/transition_data⟩.

Finally, at the risk of overgeneralization, government bureaucracies with roots in central planning appear to have an unusually strong penchant for collecting extensive administrative data. These records provide unique research opportunities for those willing to establish contact in the region and to take the time to clean and code the data. Examples of work using such data include studies of wages (Filer, Jurajda and Plánovský, 1999; Orazem and Vodopivec, 1997); unemployment (Ham, Svejnar and Terrell, 1999; Lubyova and van Ours, 1999); inequality (Jurajda, 2000); school reform and educational choice (Filer and Munich, 2000); and even environmental pollution (Earnhart, 2000).

Enterprise Data

Data from enterprises in transition economies come from the same basic sources as individual-level data, but the balance across various sources differs. Although most statistical offices collect regular data on enterprises, confidentiality concerns make such data hard for researchers to obtain.[6] Even so, several researchers have arranged to use these data, often after paying for statistical offices to make it anonymous. Examples of research relying on firm databases from statistical offices include Lizal, Singer and Svejnar (2001), Djankov and Hoekman (2000), Jones and Mygind (1999) and Brada, King and Ma (1997).

Most postcommunist countries now have public databases that consolidate financial and other public information on a wide sample of firms. These are available in a single set in the Amadeus (Analyse MAjor Databases from EUropean Sources) database from the commercial provider Bureau van Dijk-Electronic Publishing (information at ⟨http://www.bvdny.com/default.asp⟩), but larger samples are often available for a single country from the local firm that supplies Amadeus. An indication of the availability of these data is contained in Table 4. Other commercial data providers in single countries have also been used by various researchers. Publications using these commercial databases include Weiss and Nikitin (2002), Budina, Garretsen and de Jong (2000) and Claessens and Djankov (1999).

[6] Again, a notable exception is the Czech Republic, where enterprise data are available on the secure server at CERGE-EI.

Table 4
Firm-Level Data in Transition

Country	*# Firms in the Database Amadeus*	*# of Firms in Local Provider's Database*	*What is the Average/ Longest Coverage Period?*	*Data Provider for Amadeus*	*Website*
Bosnia-Herzegovina	715				
Bulgaria	10,113	325,000	3–4 years	Creditreform Bulgaria	http://www.creditreform.bg
Croatia	18,730	60,000	Average 3 years, some data since 1992 (due to high inflation comparable since 1994)	Creditreform Croatia	http://www.creditreform.hr
Czech Republic	10,680	10,759	4 years/since 1993	Albertina data	http://www.albertina.cz
Estonia	27,703	28,000	Since 1996	Krediidiinfo	http://www.kredinfo.ee
Hungary	9,518	300,000	3–4 years/since 1996	Creditreform Hungary	http://www.creditreform.hu
Latvia	3,331			Creditreform Latvia	http://www.creditreform.lv
Lithuania	1,874			Patikimo Verslo Sistema	+370-2-22 4133
Macedonia	128			Creditreform Republic of Macedonia	
Poland	12,238			InfoCredit	http://www.infocredit.pl
Romania	369,027			Chamber of Commerce and Industry of Romania	+40 1 223 08 93
Russia	9,731			Creditreform Russia	http://www.creditreform.haupt.ru
Slovak Republic	2,367	3,000	3 years/since 1993	Albertina data	http://www.albertina.cz
Slovenia	815	35,000	4–6 years	Intercredit Ljubljana	http://www.intercredit.si
Ukraine	1,171			Creditreform	
Yugoslavia	2,224			MID Group Intermare imi	+381 11 35 46 774

A significant number of researchers have also based firm-level analysis in transition economies on private, project-specific surveys. These have frequently been sponsored by the World Bank or the European Bank for Reconstruction and Development and so should easily be obtainable for further analysis. Among the studies based on private surveys are examinations of restructuring (Djankov and Pohl, 1998; Linz and Krueger, 1998); the impact of foreign investment (Deardorff and Djankov, 2000); ownership effects (Anderson, Korsun and Murrell, 2000; Buck et al., 1999); privatization (Johnson, McMillan and Woodruff, 2000; Estrin and Rosevear, 1999; Frydman et al., 1999); and employment arrangements (Linz, 1998).[7]

Finally, those interested in asset market efficiency and market microstructure will find a wealth of data available from regional stock markets. Typically, daily (and

[7] Some scholars have also collected data on units other than firms. For a collection of data on local governments, see ⟨http://www.ssc.upenn.edu/dlg⟩.

even intraday) trading data and prices can be downloaded from the websites maintained by these exchanges. The web addresses and an indication of the data available from them are in Table 5. Examples of recent work using micro data from stock markets in transition economies include Hanousek and Němeček (2001), Rockinger and Urga (2001), Charemza and Majerowska (2000), Hanousek and Podpiera (2000), Kratz (1999) and Jermakowicz and Gornik-Tomaszewski (1998).

Some Final Cautions

When using typical data from the developed economies, issues concerning the meaning and usefulness of data can often be elided. However, the scholar who ignores the unique problems of data in the transition region runs a serious risk of findings that are at best meaningless and at worst totally inaccurate. Here, we offer a nonexhaustive sample of some common problems one might encounter. In each area discussed below, we could cite several well-respected authors who have fallen into the trap of pushing their analysis beyond what their data will support. Professional courtesy, however, suggests allowing the guilty to remain anonymous.

Accounting standards under communism were vastly different from those generally accepted in western Europe or the United States. Over time, leading firms in transition economies have adopted western norms, although many still run dual books, since local rules must be used for tax and other purposes. Data sets may contain a mixture of western and local figures for such critical variables as profits or investments, often without any indication of which was used by any given firm. Researchers must be alert as to whether purported effects of variables, such as ownership status on productivity or profitability, represent real impacts or simply a nonrandom pattern of choice of accounting standards.

Data sets often contain variables with apparently obvious meanings that, when examined closely, bear little resemblance to what a naive investigator might suppose was being represented. For example, firm ownership has been a key issue in a number of studies. How many scholars have blithely included a private ownership dummy in a regression without being conscious of the fact that some data report a firm as private (and economic activity as taking place in the private sector) if *any* of the firm's equity is in private hands? Thus, a firm that is 10 percent privately held and 90 percent in state hands may show up in data as a private firm. Things can get even more complicated if one attempts to trace true control of firms. For example, how should a researcher classify the ownership status of a firm that is 30 percent owned by the state and 70 percent owned by investment funds that are managed by banks that are 40 percent owned by the state and 60 percent owned by investment funds that are controlled by other banks?[8]

It is amazing how few studies take the endogeneity of ownership status into account. While authors sometimes try to adjust for government decisions regarding which firms to privatize by which method using past data, almost none have

[8] Turnovec (1999) discusses the confused ownership patterns of Czech firms.

Table 5
Stock Market Data in Transition Economies

Country	*Market Place*	*Internet Address*	*Data Frequency*	*Comment*
Bulgaria	Sofia Stock Exchange	http://www.bse-sofia.bg	daily, weekly, monthly, annually	Data are provided in electronic and hard copy format. Service is by subscription only, although some restricted files are available for direct download from the Internet site. Monthly bulletin is also available.
Croatia	Zagreb Stock Exchange	http://www.zse.hr	daily, monthly, annually	Data on stock prices, volumes, market indices are downloadable in pdf format from the website in English and Croatian. Quarterly and yearly data from 1Q1997, monthly data from January 2000, daily reports only the most recent week. Data on official CROBEX index from September 1997, including description, composition and calculation methodology.
Czech Republic	Prague Stock Exchange	http://www.pse.cz	daily, monthly, quarterly, annually	Data on trading statistics, market and sector indices, and fact books are downloadable in pdf and dbf formats (data coverage starts from 1994). Detailed description of each variable as well as calculation methodology and index composition provided. English and Czech.
Estonia	Tallin Stock Exchange	http://www.tse.ee	daily, weekly, monthly, annually	Complete coverage of all the trading statistics and market indices. Different formats (html, text). English and Estonian. Part of Baltic Stock Exchange alliance.
FR Yugoslavia	Belgrade Stock Exchange	http://www.belex.co.yu	daily, monthly[a]	Only basic aggregate stock market data (total turnover, indices, volume) are available on daily frequency. Monthly Bulletin is published in English, rest of the publications are in Serbian. No individual share prices available. No historic records.
FYR Macedonia	Macedonian Stock Exchange	http://www.mse.org.mk	daily, monthly[a]	Only basic data on daily basis and aggregate data on monthly basis. Coverage is poor, content is scarce and nonregular.
Hungary	Budapest Stock Exchange	http://www.fornax.hu http://www.bet.hu http://www.bse.hu	daily, weekly, monthly, annually	⟨http://www.fornax.hu⟩ or ⟨http://www.bet.hu⟩ (in Hungarian only) and ⟨http://www.bse.hu⟩ (in English and Hungarian). No historical data on English site, more can be found on Hungarian sites (stock prices, volumes, index data, charts and company brief information).

Table 5—continued

Country	*Market Place*	*Internet Address*	*Data Frequency*	*Comment*
Latvia	Riga Stock Exchange	http://www.rfb.lv	daily, monthly	Part of Baltic Stock Exchange Alliance. Historical results since 10/7/97, daily results and statistics available in pdf format.
Lithuania	National Stock Exchange of Lithuania	http://www.nse.lt	daily, monthly	Very good data on all trades (central market, OTC, block trades, privatization) including real time quotes. Regulations, rules and indices and methodology as well as information on cross-listing (London) is also available. Daily statistics go back to February 1999. (List of results for Baltic securities—Estonia, Latvia and Lithuania, is available.)
Moldova	Moldovan Stock Exchange	http://www.moldse.md	???	Frequently not accessible.
Poland	Warsaw Stock Exchange	http://www.wse.com.pl	daily, weekly, monthly, annually	Full data distribution service on individual securities, market indices, trading activity, etc. are provided by Warsaw Stock Exchange. All frequencies available (but only sample data for free). Data distributed in hard copy (printed or fax) and on diskette after payment.
Romania	Bucharest Stock Exchange	www.bvb.ro	daily, monthly, annually	Instant indices, online data for listed companies, including news, market regulation, etc. Traded statistics are available, historical daily data are on line for 2000 and 2001.
Russia	Russian Stock Exchange Russian Trading System	http://www.re.ru http://www.rts.ru/engl	daily, monthly	Several trading places, Russian Stock Exchange links to English versions are frequently broken (typical for Russian servers). See also ⟨http://www.mse.ru⟩ (only in Russian). Russian trading system provides daily results, including historical quotes and statistics. Quotes and daily statistics are better at several brokerage houses—one of the best and fastest is ⟨http://www.site-by-site.com/europe/russia/astock.htm⟩.
Slovakia	Bratislava Stock Exchange	http://www.bsse.sk	daily, monthly	Share price (actual and historical), indices, market capitalization and other data are provided on contractual or one-time sale basis. Specific data set request is possible. Restricted information is provided free of charge by means of Internet and direct phone call. Complete information service on issuer (company profile) is also available.

Table 5—continued

Country	*Market Place*	*Internet Address*	*Data Frequency*	*Comment*
Slovenia	Ljubljana Stock Exchange	http://www.ljse.si	daily, monthly	Full set of stock market data services (all frequencies and data categories on individual shares and market and sector indices). The information, however, is provided through data providers licenced by LSE. For the most recent list of data providers, contact LSE. Restricted data on share prices and indices are provided without charge on the website, which also contains monthly reports and monthly aggregate statistics.
Ukraine	Ukrainian Stock Exchange	http://www.ukrse.kiev.ua/eng/index.htm	daily, monthly[a]	Very basic information on listed companies, trading results and aggregate market data and indices available from website. For detailed information in hard and electronic format, contact the stock exchange directly. See also Ukraine OTC (⟨http://www-eng.pfts.com⟩). More information can be found on Ukraine financial server (no English version) ⟨http://www.ufs.kiev.ua⟩

[a]See comments; data coverage is nonregular or only aggregate data available.

recognized that privatization authorities would rationally have used *expectations* regarding future competitiveness in the changed market environment as an element in their decision process while investors may have based their purchase decisions on their own private knowledge regarding future economic prospects.

Behavior in transition economies is heavily influenced by legacies of the communist past. In this world, governments were the enemy, and the less they knew about you, the better life was likely to be. In the words of one economist from the region: "People seem allergic to telling the authorities anything." Thus, response rates to surveys are generally far lower than in the West, with those who opt not to respond constituting a nonrandom portion of the population. Even among respondents, the evidence suggests that answers are far from reliable. No empirical study from the region should be presented that does not at least discuss the impact of sample selection and measurement error on the results.

We have referred above to our studies suggesting that inflation rates may be overstated by as much as 50 percent during the transition, due to responses to changing relative prices, shifts in distribution channels and massive unmeasured quality improvements (Filer and Hanousek, 2000, 2001; Hanousek and Filer, 2001). The lack of adequate deflators makes comparisons over time and between countries particularly problematic.

The bottom line is that it is even more important than usual in dealing with data from transition countries to pay careful attention to the details of how the data

were collected and the exact wording of questions and sample design. It is usually necessary to examine documentation exhaustively, including all footnotes. Given the fact that documentation, especially from early years of the transition, is often inadequate, researchers may have to contact statistical offices directly. We, for example, found that there was no written documentation of when the Czech Statistical Office adopted linkage procedures when replacing items in the consumer price basket and were forced to rely on the memories of senior staff members. This points out the crucial role played by language fluency. In general, western authors who cannot read and converse in the local language may find it valuable to work with collaborators from the region, many of whom are now being trained to world standards.

These cautions are meant to flag the necessity of paying special attention to the idiosyncracies and anomalies of data from the transition economies. They are not meant, however, to deny the fact that the wealth of data available in the region presents innumerable new opportunities for empirical economics.

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References

Adamchik, Vera A. and Arjun S. Bedi. 2000. "Wage Differentials Between the Public and the Private Sectors: Evidence from an Economy in Transition." *Labour Economics.* 7:2, pp, 203–24.

Anderson, James H., Georges Korsun and Peter Murrell. 2000. "Which Enterprises (Believe They) Have Soft Budgets? Evidence on the Effects of Ownership and Decentralization in Mongolia." *Journal of Comparative Economics.* 28:2, pp. 219–46.

Anderson, Katheryn H. and Richard Pomfret. 2000. "Living Standards During Transituion to a Market Economy: The Kyrgyz Republic in 1993 and 1996." *Journal of Comparative Economics.* 28:3, pp. 502–23.

Åslund, Anders. 2001. "The Myth of Output Collapse after Communism." Carnegie Endowment for International Peace, Working Paper No. 18.

Atkinson, Anthony B. and John Micklewright. 1992. *Economic Transformation in Eastern Europe and the Distribution of Income.* Cambridge, U.K.: Cambridge University Press.

Bartholdy, Kasper. 1997. "Old and New Problems in the Estimation of National Accounts in Transition Economies." *Economics of Transition.* 5:1, pp. 131–46.

Boeri, Tito and Christopher J. Flinn. 1999. "Returns to Mobility in the Transition to a Market Economy." *Journal of Comparative Economics.* 27:1, pp. 4–32.

Brada, Josef C., Arthur E. King and Chia Ying Ma. 1997. "Industrial Economics of the Transition: Determinants of Enterprise Efficiency in Czechoslovakia and Hungary." *Oxford Economic Papers.* 49:1, pp. 104–27.

Brainerd, Elizabeth. 1998. "Winners and Losers in Russia's Economic Transition." *American Economic Review.* 88:5, pp. 1094–116.

Buck, Trevor et al. 1999. "Corporate Governance and Employee Ownership in an Economic Crisis: Enterprise Strategies in the Former USSR." *Journal of Comparative Economics.* 27:3, pp. 459–74.

Budina, Nina, Harry Garretsen and Eelke de Jong. 2000. "Liquidity Constraints and Investments in Transition Economies." *Economics of Transition.* 8:2, pp. 453–75.

Charemza, Wojciech W. and Ewa Majerowska. 2000. "Regulation of the Warsaw Stock Exchange: The Portfolio Allocation Problem." *Journal of Banking and Finance*. 24:4, pp. 555–76.

Claessens, Stijn and Simeon Djankov. 1999. "Ownership Concentration and Corporate Performance in the Czech Republic." *Journal of Comparative Economics*. 27:3, pp. 498–513.

Commander, Simon, Andrei Tolstopiatenko and Ruslan Yemtsov. 1999. "Channels of Redistribution: Inequality and Poverty in the Russian Transition." *Economics of Transition*. 7:2, pp. 411–47.

Deardorff, Alan V. and Simeon Djankov. 2000. "Knowledge Transfer under Subcontracting: Evidence from Czech Firms." *World Development*. 28:10, pp. 1837–847.

Djankov, Simeon and Bernard Hoekman. 2000. "Market Discipline and Corporate Efficiency: Evidence from Bulgaria." *Canadian Journal of Economics*. 33:1, pp. 190–212.

Djankov, Simeon and Gerhard Pohl. 1998. "The Restructuring of Large Firms in the Slovak Republic." *Economics of Transition*. 6:1, pp. 67–85.

Earnhart, Dietrich. 2000. "Environmental Crime and Punishment in the Czech Republic: Penalties against Firms and Employees." *Journal of Comparative Economics*. 28:2, pp. 379–99.

Estrin, Saul and Adam Rosevear. 1999. "Enterprise Performance and Corporate Governance in Ukraine." *Journal of Comparative Economics*. 27:3, pp. 442–58.

Filer, Randall K. and Jan Hanousek. 2000. "Output Changes and Inflationary Bias in Transition." *Economic Systems*. 24:3, pp. 285–94.

Filer, Randall K. and Jan Hanousek. 2001. "Survey-Based Estimates of Biases in Consumer Price Indices During Transition: Evidence from Romania." Prague, CERGE-EI Working Paper No. 178.

Filer, Randall K. and Daniel Munich. 2000. "Responses of Private and Public Schools to Voucher Funding: The Czech and Hungarian Experience." Prague, CERGE-EI Working Paper 160.

Filer, Randall K., Štěpán Jurajda and Jan Plánovský. 1999. "Education and Wages in the Czech and Slovak Republics During Transition." *Labour Economics*. 6:4, pp. 581–93.

Flanagan, Robert J. 1998. "Were Communists Good Human Capitalists? The Case of the Czech Republic." *Labour Economics*. 5:3, pp. 295–312.

Frydman, Roman et al. 1999. "When Does Privatization Work? The Impact of Private Ownership on Corporate Performance in the Transition Economies." *Quarterly Journal of Economics*. 104:4, pp. 1153–192.

Gimpelson, Vladimir and Douglas Lippoldt. 1999. "Private Sector Employment in Russia: Scale, Composition and Performance." *Economics of Transition*. 7:2, pp. 505–33.

Gregory, Paul R., Manouchehr Mokhtari and Wolfram Schrettl. 1999. "Do the Russians Really Save That Much?" *Review of Economics and Statistics*. 81:4, pp. 694–703.

Ham, John, Jan Svejnar and Katherine Terrell. 1999. "Women's Unemployment During Transition: Evidence from Czech and Slovak Micro-Data." *Economics of Transition*. 7:1, pp. 47–78.

Hancock, Ruth and Stephen Pudney. 1997. "The Welfare of Pensioners During Economic Transition: An Analysis of Hungarian Survey Data." *Economics of Transition*. 5:2, pp. 395–426.

Hanousek, Jan and Randall K. Filer. 2001. "Consumers' Opinion of Inflation Bias Due to Quality Improvements in Transition in the Czech Republic." Prague, CERGE-EI Working Paper 184.

Hanousek, Jan and Libor Němeček. 2001. "Mispricing and Lasting Arbitrage Between Parallel Markets in the Czech Republic." *European Journal of Finance*. 7:1, pp. 1–24.

Hanousek, Jan and Richard Podpiera. 2000. "How Important is Informed Trading for the Bid-Ask Spread? Evidence from an Emerging Market." Prague, CERGE-EI Working Paper 168.

Jermakowicz, Eva K. and Sylwia Gornik-Tomaszewski. 1998. "Informational Content of Earnings in the Emerging Capital Market: Evidence from the Warsaw Stock Exchange." *Multinational Finance Journal*. 2:4, pp. 245–67.

Johnson, Simon, John McMillan and Christopher Woodruff. 2000. "Entrepreneurs and the Ordering of Institutional Reform: Poland, Slovakia, Romania, Russia and Ukraine Compared." *Economics of Transition*. 8:1, pp. 1–36.

Jones, Derek C. and Niels Mygind. 1999. "The Nature and Determinants of Ownership Changes after Privatization: Evidence from Estonia." *Journal of Comparative Economics*. 27:3, pp. 422–41.

Jurajda, Štěpán. 2000. "Gender Wage Gap and Segregation in Late Transition." Prague, CERGE-EI Discussion Paper 36.

Jurajda, Štěpán and Katherine Terrell. 2001. "The Optimal Speed of Transition: Micro Evidence from the Czech Republic." Prague, CERGE-EI Working Paper 170.

Kattuman, Paul and Gerry Redmond. 2001. "Income Inequality in Early Transition: The Case of Hungary 1987–1996." *Journal of Comparative Economics*. 29:1, pp. 40–65.

Kim, Byung Yeon. 1997. "Soviet Household Saving Function." *Economics of Planning*. 30:2-3, pp. 181–203.

Konica, Nevila and Randall K. Filer. 2001. "The Impact of Emigration and Remittances on Albanian Families during Transition." Prague, CERGE-EI Working Paper 181.

Kratz, Oliver S. 1999. *Frontier Emerging Equity Markets Securities Price Behavior and Valuation.* Boston: Kluwer Academic.

Kroncke, Charles and Kenneth Smith. 1999. "The Wage Effects of Ethnicity in Estonia." *Economics of Transition.* 7:1, pp. 179–99.

Lehmann, Hartmut and Jonathan Wadsworth. 1997. "New Jobs, Worklessness and Households in Poland." *European Economic Review.* 41:3-5, pp. 915–23.

Lehmann, Hartmut and Jonathan Wadsworth. 2000. "Tenures that Shook the World: Worker Turnover in Russia, Poland and Britain." *Journal of Comparative Economics.* 28:4, pp. 639–64.

Lehmann, Hartmut, Jonathan Wadsworth and Alessandro Acquisti. 1999. "Grime and Punishment: Job Insecurity and Wage Arrears in the Russian Federation." *Journal of Comparative Economics.* 27:4, pp. 595–617.

Liberati, Paolo. 2001. "Poverty and Monetary Transfers in Belarus." *Economics of Transition.* 9:1, pp. 175–203.

Linz, Susan J. 1998. "Job Rights in Russian Firms: Endangered or Extinct Institution?" *Comparative Economic Studies.* 40:4, pp. 1–32.

Linz, Susan J. and Gary Krueger. 1998. "Enterprise Restructuring in Russia's Transition Economy: Formal and Informal Mechanisms." *Comparative Economic Studies.* 40:2, pp. 5–52.

Lizal, Lubomir, Miroslav Singer and Jan Svejnar. 2001. "Enterprise Breakups and Performance during the Transition from Plan to Market." *Review of Economics and Statistics.* 83:1, pp. 92–99.

Lokshin, Michael and Martin Ravallion. 2000. "Welfare Impacts of the 1998 Financial Crisis in Russia and the Response of the Public Safety Net." *Economics of Transition.* 8:2, pp. 269–95.

Lubyova, Martina and Jan van Ours. 1999. "Unemployment Durations of Job Losers in a Labour Market in Transition." *Economics of Transition.* 7:3, pp. 665–86.

Miqual, Ruth and François Laisney. 2001. "Consumption and Nutrition." *Economics of Transition.* 9:1, pp. 115–51.

Newberry, David M. 1995. "The Distributional Impact of Price Changes in Hungary and the United Kingdom." *Economic Journal.* 105:431, pp. 847–63.

Oglobin, Constantin G. 1999. "The Gender Earnings Differential in the Russian Transition Economy." *Industrial and Labor Relations Review.* 52:4, pp. 602–27.

Orazem, Peter F. and Milan Vodopivec. 1997. "Value of Human Capital in Transition to Market: Evidence from Slovenia." *European Economic Review.* 41:3-5, pp. 893–903.

Pentaraki, Konstantina N. and George J. Mergos. 1999. "An Analysis of Poverty in Slovenia Using the 1993 Household Budget Survey." *East-West Series in Economics, Business, and the Environment.* 2:1-2, pp. 96–104.

Reilly, Barry. 1999. "The Gender Gap in Russia During the Transition." *Economics of Transition.* 7:1, pp. 245–64.

Rockinger, Michael and Giovanni Urga. 2001. "A Time-Varying Parameter Model to Test the Predictability and Integration in the Stock Markets of Transition Economies." *Journal of Business and Economic Statistics.* 19:1, pp. 73–84.

Scherbov, Sergei and Harrie van Vianen. 1999. "Marital and Fertility Careers of Russian Women Born Between 1910 and 1934." *Population and Development Review.* 25:1, pp. 129–34.

Skafar, Alenka. 1998. "Overview of Tourism Statistics at the Statistical Office of the Republic of Slovenia." *Tourism and Hospitality Management.* 4:1, pp. 135–44.

Sorm, Vit and Katherine Terrell. 2000. "Sectoral Restructuring and Labor Mobility: A Comparative Look at the Czech Republic." *Journal of Comparative Economics.* 28:3, pp. 431–55.

Turnovec, František. 1999. "Privatization, Ownership Structure and Transparency: How to Measure the True Involvement of the State." *European Journal of Political Economy.* 15:4, pp. 605–18.

Verme, Paolo. 2000. "The Choice of Working Sector in Transition." *Economics of Transition.* 8:3, pp. 691–731.

Weiss, Andrew and Geogiy Nikitin. 2002. "Performance of Czech Companies by Ownership Structure," in *Designing Financial Systems in Transition Economies.* Anna Meyendorff and Anjan Thakor, eds. Cambridge, Mass.: MIT Press, forthcoming.

Wilder, Lisa, Mary Ellen Benedict and Marie Viies. 1999. "A Demographic Analysis of Income Distribution in Estonia." *Comparative Economic Studies.* 41:1, pp. 96–113.

Zohoori, Namvar et. al. 1998. "Monitoring the Economic Transition in the Russian Federation and Its Implications for the Demographic Crisis." *World Development.* 26:11, pp. 1977–993.