



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

Papers downloaded from AgEcon Search may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.



ZEF Bonn
Zentrum für Entwicklungsforschung
Center for Development Research
Universität Bonn

Akram Esanov, Martin Raiser
and Willem Buiter

Number
81 **Nature's Blessing or
Nature's Curse: The Political
Economy of Transition in
Resource-Based Economies**

ZEF – Discussion Papers on Development Policy
Bonn, January 2004

The CENTER FOR DEVELOPMENT RESEARCH (ZEF) was established in 1995 as an international, interdisciplinary research institute at the University of Bonn. Research and teaching at ZEF aims to contribute to resolving political, economic and ecological development problems. ZEF closely cooperates with national and international partners in research and development organizations. For information, see: <http://www.zef.de>.

ZEF – DISCUSSION PAPERS ON DEVELOPMENT POLICY are intended to stimulate discussion among researchers, practitioners and policy makers on current and emerging development issues. Each paper has been exposed to an internal discussion within the Center for Development Research (ZEF) and an external review. The papers mostly reflect work in progress.

Akram Esanov, Martin Raiser and Willem Buiter: Nature's Blessing or Nature's Curse: The Political Economy of Transition in Resource-Based Economies, ZEF – Discussion Papers On Development Policy No. 81, Center for Development Research, Bonn, January 2004, pp. 22

ISSN: 1436-9931

Published by:

Zentrum für Entwicklungsforschung (ZEF)

Center for Development Research

Walter-Flex-Strasse 3

D – 53113 Bonn

Germany

Phone: +49-228-73-1861

Fax: +49-228-73-1869

E-Mail: zef@uni-bonn.de

<http://www.zef.de>

The authors:

Akram Esanov, Department of Economics, Kansas State University, USA

Martin Raiser, The European Bank for Reconstruction and Development (EBRD), UK
(contact: Raiserm@ebrd.com)

Willem Buiter, The European Bank for Reconstruction and Development (EBRD), UK

Contents

Acknowledgement

Abstract

1	Introduction	1
2	Reform and Structural Change: The Role of Resources Rents	3
2.1	How large are energy rents?	3
2.2	Energy rents and reform	7
3	The Political Economy of Resource Dependence	11
3.1	From Soviet transfers to domestic rent appropriation	11
3.2	Resource rents and economic policy during transition	13
3	Pathways Out of Excessive Resource Dependence	17
4	Conclusions	20
	References	21

Acknowledgement

This paper is part of a collaborative research effort between ZEF, the National Bureau of Asian Research, Seattle, WA, and Professor Richard Auty of Lancaster University. The larger project focusses on the effects of natural resources on governance in the Caspian Sea Region.

Abstract

This paper¹ analyses the reform progress made in the energy-rich states of the Commonwealth of Independent States (CIS), Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan (AKTU for short) and contrasts their development to that in the resource-poor countries at the CIS periphery. The main argument of the paper is that far from being a blessing that would have allowed energy-rich countries to cushion the impact of reforms and thus make faster progress, energy rents have often been wasted or appropriated by the ruling elites. Progress in key structural reforms has in some cases lagged even behind other CIS countries and significant policy challenges need to be addressed if natural resource wealth is not to turn into a curse for the region.

¹ The views and opinions expressed in this paper are those of the authors: Akram Esanov, Martin Raiser and Willem Buiter. They do not reflect the views and opinions of the European Bank for Reconstruction and Development. Comments from Rick Auty, Sam Fankhauser, Clemens Grafe, Peter Sanfey and Yelena Kalyuzhnova on an earlier draft are gratefully acknowledged. The authors are also grateful to Natalya Shevchik and Katrin Tinn for research assistance on the calculation of resource rents.

1 Introduction

This paper analyses reform progress during the first decade of transition in the energy-rich CIS states of Central Asia and the Caucasus, Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan (AKTU for short)² and contrasts their development to that in the resource-poor countries in that region. While agricultural land, minerals and hydrocarbon reserves are all part of a country's resource endowment, we focus on the availability of energy resources as the key differentiating factor in explaining transition paths in the CIS. This is because energy resources have tended to generate far larger resource rents than minerals or agriculture. Resource rents are here understood to be pure profits generated by the extraction of natural resources, once all factors of production have been remunerated at their opportunity cost and the costs of transport to market has been subtracted.

The main argument is that far from being a blessing that would have allowed energy-rich countries to cushion the impact of reforms and thus make faster progress, resource rents have often been wasted or appropriated by the ruling elites. Progress in key structural reforms has in some cases lagged behind even that in other CIS countries and significant policy challenges need to be addressed if natural resource wealth is not to turn into a lasting curse for the region.

The attempt to find a common explanation for the transition patterns observed across the resource-rich countries immediately faces the problem that along certain dimensions these patterns have differed quite dramatically between, say, Kazakhstan on the one hand and Turkmenistan on the other (Gürgen et al., 1999; Kalyuzhnova et al., 2001; Pomfret, 2002). However, we propose a political economy explanation that can account for these differences, while at the same time pointing towards key common challenges for all resource-rich transition economies.

At the centre of our argument is the idea that the presence of natural resource wealth allowed incumbent elites to remain in power and shut out reformers. This was the case in Turkmenistan and Uzbekistan. Where natural resources were not yet sufficiently developed – as in Azerbaijan and Kazakhstan – and the country depended on outside investment, an initial phase of liberalisation was succeeded by a phase of increasing national assertiveness. What all four countries have in common is the lack of turnover among ruling elites and economic policies discouraging entry and entrepreneurship.

² We choose the slightly awkward acronym AKTU rather than the geographical label "Caspian", since Uzbekistan does not actually lie on the Caspian Sea.

The control over resource rents and policies aimed at limiting economic and political competition are the pillars of the political economy of reform in the resource-rich countries. In the resource-poor countries, the absence of resource rents meant that incumbent elites were more likely to be replaced at the start of transition. This political turnover initially made the countries more receptive to economic reform, reinforced by IFI conditionality.³

The arguments in this paper are related to the large literature investigating the impact of natural resources on economic performance (Sachs and Warner, 1995; Tornell and Lane, 1999; Gylfason, 2001; Auty and Mikesell, 1998). Most relevant here, Dalmazzo and de Blasio (2001) develop a model in which reform leads simultaneously to a reduction in rent appropriation by the elites and an expansion of private business opportunities. The results are that natural resource abundance reduces the incentives to reform and hurts growth. The combination of self-interested autocratic rule and access to resource rents is what drives the political economy of reform in this model, in line with the argument we outlined above. Political competition leading to more “voice” in decision making by interest groups not associated with the elites can help to bring about liberalisation.

The structure of this paper is as follows. Section 2 provides an overview of reform progress in the resource-rich countries to date and compares it with the rest of the CIS. It shows that resource rents have typically been large in the AKTU countries but much of it has been dissipated in energy subsidies, rather than used to accelerate reform through taxation and redistribution to potential losers. As a result, the resource-rich Central Asian and Caucasus countries have actually lagged behind the rest of the CIS in some dimensions of reform. Section 3 tries to explain the patterns observed with reference to the disincentives to reform faced by elites as they continued to enjoy access to resource rents. It also shows that – as expected – political turnover in the resource-rich countries has been low. Section 4 examines possible ways out of excessive resource dependence for the countries in the region.

³ Unfortunately, initial turnover of political elites in the resource poor CIS countries has given way to retrenchment of the old guard with many reformers progressively squeezed out. IFI conditionality and initial reform outcomes have not been sufficient to consolidate a pro-reform constituency.

2 Reform and Structural Change: The Role of Resources Rents⁴

The degree of energy dependence in the four energy-rich countries of Central Asia and the Caucasus was particularly high under central planning and hence availability of energy resources was a particularly important source of potential subsidies. The beneficiaries of such subsidies were principally the inefficient old industrial dinosaurs throughout the Soviet Union. In trying to understand how the availability of resource rents influences the propensity to reform, the focus on energy rents is useful, since industrial dinosaurs were a critical constituency for incumbent political elites. We will show that energy rents in the energy-rich transition economies have indeed been largely consumed by implicit subsidies, rather than being used to support social safety nets and investment in public infrastructure and human capital to ease the process of adjustment.

2.1 How large are energy rents?⁵

Table 1 shows that by the end of the 1990s, the AKTU countries had a dependence on oil and gas revenues in exports and government revenues similar to Iran or Norway and considerably higher than, for instance, Mexico. For Azerbaijan and Kazakhstan, resource dependence has increased considerably since the start of reforms. The Caspian oil fields were left under-exploited in Soviet times, both for strategic and technological reasons, as Russia felt safer and technologically better-equipped developing its own vast west Siberian reserves. Gas from Turkmenistan and Uzbekistan was, however, extracted at high rates during Soviet times and Turkmenistan was for a brief period in 1992-93 granted access to non-CIS markets for its gas exports, generating around US\$ 3 billion in early resource rents. This difference has had a bearing on reform patterns, as we will show below.

⁴ This section draws on work from Chapter 4 of the *Transition Report 2001*.

⁵ The calculations in this section are highly tentative and based on partial information. A full account of the assumptions is given in the working paper version of this chapter (Esanov et al., 2002). Detailed country-by-country calculations of resource rents and quasi fiscal deficits in the energy sector have been undertaken for Azerbaijan (2002), Russia (Renaissance Capital 2002) and Uzbekistan (World Bank, 2003).

Table 1: Indicators of resource dependence, selected transition economies and other oil producing countries (In per cent unless otherwise indicated)

	Azerbaijan ¹	Kazakhstan ²	Russia ³	Turkmenistan ⁴	Uzbekistan ⁵	Venezuela ⁶	Mexico ⁷	Iran ⁸	Norway ⁹
Oil and gas export in per cent of total exports	85.2 (78.2)	46.8 (34.1)	50.4 (60.2)	81 (62.6)	12.3 (13.3)	69.8	9.8 (7.3)	69.4	0.35
Oil and gas export in per cent of GDP	30.5 (17.6)	24.7 (12.1)	21.5 (16.3)	68.7 (31.6)	4.3 (3.6)	25.4	0.7 (0.5)	14.7	0.14
Oil and gas revenues in per cent of total government revenues	36.2 (22.1)	27.5 (5.0)	30.1 (24.2)	42.0	14.8 (15.4)	42.5	24.1 (29.8)	45.9	0.16
FDI in oil and gas sector in per cent of total FDI	80.5 (71.0)	69.7 (83.3)	10.7	na	na	na	na	na	na
Memo:									
Oil production (mt, 2000)	14.02	35.00	312.70	7.25	7.60	153.88	168.78	188.63	148.92
Gas production (bcm) 2000	6.00	11.50	551.00	46.00	54.88	28.00	36.40	53.20	20.00

For all transition economies oil and gas production is for 2001 and from *BP Energy Outlook*, 2000. For other countries energy production is for 1999 and from the EIA.

1/ Figures for Azerbaijan are all from the IMF *Staff Report*, June 2001. Figures are for 2000 and those in brackets for 1999. Figures for the share of the oil and gas sector in FDI were calculated from gross inflow data. Net FDI into the oil sector was negative in 2000, due to repayments on inter-company loans under the PSAs.

2/ Figures are for 2000, in brackets for 1999. Figures for oil and gas exports and government revenues are from IMF. Exports are not corrected for under-invoicing.

3/ Figures are for 2000, in brackets for 1999, except for the share of oil and gas in FDI, which is from UNCTAD *World Investment Report* 2000 and refers to 1999. For oil and gas exports revenues are for the first quarter only.

4/ Figures refer to 2000, in brackets to 1999. Figures for oil and gas exports are from Interfax. Turkmenistan's US dollar GDP is an EBRD staff estimate based on a weighted exchange rate taking into the existence of a large parallel market premium. Data for the share of oil and gas in government revenues are based on oral communications from the Ministry of Finance. Data for FDI into the energy sector is unavailable, but may amount to anything between half and two-thirds of FDI inflows in recent years.

6/ Data are for 1998 and from the IMF.

7/ Data are for 2000, in brackets for 1999. All data are from the Mexican statistical office.

8/ Data are for 1999 and all from the IMF.

9/ Data for exports are for 1999 and from the Norwegian statistical office. The share of oil and gas in government revenues is for 1998 and from the EU (www.eubusiness.com).

Nature's Blessing or Nature's Curse: The Political Economy of Transition in Resource-Based Economies

Commensurate with the high degree of dependence on energy resources as a source of foreign exchange and government revenues, oil and gas production in AKTU generates very significant rents. Rents in principle accrue on both exports and domestic sales, and are shared between producers, the owners of transport infrastructure, governments and domestic energy consumers. Table 2 shows the ratio of oil and gas rents to GDP and how this is distributed among exporters, domestic producers and domestic energy consumers.

Table 2 - Energy rents in AKTU and Russia, 1992-2000, in per cent of GDP

Gas rents (% of GDP)								
	Total potential rent		Export rent		Domestic subsidy		Producer rent	
	1992-2000 average	2000	1992-2000 average	2000	1992-2000 average	2000	1992-2000 average	2000
Azerbaijan	8.6	5.7	0.3	0.0	9.8	5.1	-1.5	0.6
Kazakhstan	1.2	1.5	0.0	0.0	-0.5	-0.1	1.7	1.6
Turkmenistan	47.2	31.6	36.2	23.4	11.1	13.2	-0.1	-4.9
Uzbekistan	13.3	17.8	2.4	4.6	-0.5	-6.3	11.4	19.5
Russia	11.3	16.5	3.8	5.4	5.3	4.3	2.2	6.9
Oil rents (% of GDP)								
	Total potential rent		Export rent		Domestic subsidy		Producer rent	
	1992-2000 average	2000	1992-2000 average	2000	1992-2000 average	2000	1992-2000 average	2000
Azerbaijan	30.7	50.5	6.9	28.1	1.6	7.2	22.2	15.2
Kazakhstan	13.0	27.2	9.5	22.6	1.5	2.8	2.0	1.9
Turkmenistan	13.6	31.6	3.9	18.1	7.1	8.7	2.6	4.9
Uzbekistan	5.6	15.6	0.3	1.6	1.5	1.0	3.8	12.9
Russia	8.7	16.2	3.6	7.5	0.0	0.0	5.1	8.7

Sources: National statistical offices, International Energy Agency, Interfax Petroleum Report, PlanEcon.

Notes: Export rents are calculated as actual export revenues minus transportation costs, minus production costs.

Total rents are calculated as total production times export price minus production and transportation costs.

Domestic consumer subsidies are domestic consumption times the difference between domestic prices and import prices.

Domestic producer rent is total rent minus export rent, minus domestic consumer subsidies, minus producer rents.

Transport rents accruing to domestic transport operators are not considered in this analysis, as this would considerably complicate the picture.⁶ We do not distinguish between rents accruing to the government through taxes and royalties and those accruing to the owners of oil and gas resources (which in some cases are state-owned enterprises). Total rents are calculated by multiplying total production (TV) by the export price (EP) net of lifting (PC) and transportation costs (TC) per unit of output:

$$(1) \quad TR = TV * (EP - PC - TC)$$

These total rents do not accrue entirely to the country if there are constraints on transport and thus a gap is introduced between domestic prices and net export prices. Actual export rents can thus be calculated analogously but using only actual export volumes (EV):

$$(2) \quad ER = EV * (EP - PC - TC)$$

Domestic subsidies (DS) are calculated using import prices (IP) as the opportunity cost of energy, subtracting domestic prices (DP) and multiplying the resulting expression by domestic consumption (DV). Consumer subsidies do not include collection arrears, assumed to be zero in these calculations. When domestic prices exceed import prices, subsidies become negative.

$$(3) \quad DS = DV * (IP - DP), \text{ where } DV + EV = TV$$

Domestic producer rents (DR) are total rents minus export rents and domestic consumer subsidies:

$$(4) \quad DR = TR - ER - DS = DV * (EP - PC - TC - IP + DP)$$

Assuming export prices minus transportation costs are always higher or equal to import prices, domestic producer rents will be positive whenever domestic prices are above production costs. The difference between net export prices and import prices contributes to domestic producer rents by construction, although it does not generate an actual resource flow as exports are constrained by the availability of transport. The numbers in Table 4.2 therefore reflect largely hypothetical domestic producer rents, whereas export rents and consumer subsidies are estimates of actual resource flows.

Table 2 reveals that total energy rents during 1992-2000 have ranged between 15 per cent of GDP in Kazakhstan and over 60 per cent in Turkmenistan, which is high by any standards. Export rents have typically been less than half of the total, although they are higher in oil than in

⁶ Some transit countries, such as Belarus and Ukraine, have actually leveraged their control over export routes to extract very significant transit rents, which could explain their reform hesitation. To the extent that transit rents accrue to domestic pipeline operators, they can be treated analytically the same way as producer rents or export rents – that is as a source of tax revenue for the government.

gas and have increased over time as new transport capacity from the Caspian has come on stream. Domestic rents have been shared out among producers and consumers in different ways across the four countries. In Turkmenistan and to a lesser extent in Azerbaijan, domestic rents have gone mainly to domestic consumers in the form of across the board price subsidies. The same is true in the gas sector in Russia and Uzbekistan.⁷ In Kazakhstan, energy prices are closest to opportunity costs and domestic subsidies have been relatively small, although noticeably increasing in the oil sector (as reflected, for instance, in recurrent export bans for domestic fuel products). In all countries a large share of domestic producer rents is also lost due to payment arrears or non-payment of domestic energy bills (Walters, 2000).

2.2 Energy rents and reform

In principle, governments can tax both export and domestic producer rents. In the transition context such tax revenue could help to smooth adjustment costs to the large supply and demand shocks resulting from transition for other sectors of the economy. However, rather than taxing available resources to cushion the costs of adjustment, AKTU governments have to various degrees chosen to maintain implicit transfers to special interest groups. In addition, in several instances, the leaders of the AKTU countries have appropriated export rents outside the state budget for the benefit of their closest entourage. This is most evident in Turkmenistan, where the US\$ 1.5 billion foreign exchange reserves, largely earned from gas sales in 1992-93, remain under the direct control of President Niyazov.

Table 3 turns to the expenditure side of the budget and examines whether the stronger potential tax base of the AKTU countries has allowed them to spend more on investment in health and education. This might be an indication of attempts to ease the social costs of structural adjustment and make reforms politically more acceptable. The evidence in Table 3 reveals that this is not the case: Kyrgyzstan spends as much as Kazakhstan, Armenia almost as much as Azerbaijan and only Uzbekistan stands out as spending notably more than the average CIS country on health and education. These figures should not be over-interpreted, however, as the efficiency of expenditures and the quality of the services delivered in the social sector may vary.

⁷ The data on domestic oil and gas prices in Uzbekistan reported in World Bank (2003) are considerably below earlier estimates obtained from IMF Country Reports. For gas prices the difference is so large that we report only 2000 estimates for domestic subsidies and producer rents using World Bank data. Estimates presented in Esanov et al. (2002) suggest domestic subsidies were negative in the Uzbek gas sector, a finding that contradicts the received expert opinion in the country.

Table 3 - Average expenditures on health and education

	Health % GDP		Education % GDP	
	Average 1991-2000	2000	Average 1991-2000	2000
AKTU				
Azerbaijan	1.5	0.9	4.2	3.8
Kazakhstan	2.4	2.2	4.1	3.9
Turkmenistan	2.6	3.6	4.6	2.8
Uzbekistan	3.6	3.0	8.2	7.3
Russia	3.3	3.1	3.7	2.8
CEE	5.5	5.4	4.7	4.7
CIS	3.1	2.3	4.9	3.6

Source: National authorities, IMF.

Note: Where data for 2000 were not available the number refers to the last available year. The average is computed using all available data during 1991-2000.

What has been the effect of resource rents on economic reform? Table 4 shows the transition indicators for the eight dimensions scored by the EBRD in the first year of transition, in year 5 and in year 10, for AKTU and Russia, as well as averages for central and eastern Europe and the rest of the CIS. Compared with central and eastern Europe, the AKTU economies lag behind in most dimensions in year 5 and year 10. Compared with the rest of the CIS, this is the case only for foreign exchange liberalisation in year 10, where the difference is statistically significant using a standard one-tailed t-test.⁸ The AKTU countries do not significantly exceed the average for the rest of the CIS in any reform dimension. This is a remarkable result, if we remember the size of the rents available to these economies to cushion adjustment costs and thus the potentially much weaker feasibility constraint on implementing reform. However, it squares well with the political economy story sketched in the introduction: in countries with significant resource rents, incumbents can use these to fend off the pressure for reform.

⁸ The difference between AKTU and CIS non-oil economies for price liberalisation is marginally significant at the 12% significance level.

Table 4 – Reform progress in energy-rich countries, compared to eastern Europe and non-oil CIS average 1/

Country	Year 2/	LSP	SSP	G&ER	PL	T&FES	CP	BR&IRL	SM&NB	ref1	ref2
Azerbaijan	t1	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.3	1.0
Kazakhstan	t1	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.5	1.0
Turkmenistan	t1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Uzbekistan	t1	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.3	1.0
Russia	t1	2.0	2.0	1.0	3.0	3.0	2.0	1.0	1.0	2.5	1.3
CEE	t1	1.0	1.8	1.0	2.0	1.5	1.0	1.0	1.1	1.6	1.0
CIS non-oil	t1	1.1	1.4	1.0	2.1	1.4	1.2	1.0	1.2	1.5	1.1
AKTU (w/o Russia)	t1	1.0	1.3	1.0	1.8	1.0	1.0	1.0	1.0	1.3	1.0
Azerbaijan	t5	1.0	2.0	1.7	3.0	2.0	2.0	2.0	1.0	2.0	1.7
Kazakhstan	t5	3.0	3.3	2.0	3.0	4.0	2.0	2.0	1.7	3.3	1.9
Turkmenistan	t5	1.0	1.7	1.0	2.0	1.0	1.0	1.0	1.0	1.4	1.0
Uzbekistan	t5	2.7	3.0	2.0	3.0	2.0	2.0	1.7	2.0	2.7	1.9
Russia	t5	3.0	4.0	2.0	3.0	4.0	2.0	2.0	3.0	3.5	2.3
CEE	t5	2.3	3.5	2.2	2.8	3.6	1.8	2.4	1.8	3.1	2.1
CIS non-oil	t5	2.4	3.0	1.8	3.0	3.1	1.9	1.7	1.6	2.9	1.7
AKTU (w/o Russia)	t5	1.9	2.5	1.7	2.8	2.3	1.8	1.7	1.4	2.4	1.6
Azerbaijan	T10	2.0	3.3	2.0	3.0	3.3	2.0	2.3	1.7	2.9	2.0
Kazakhstan	T10	3.0	4.0	2.0	3.0	3.3	2.0	2.7	2.3	3.3	2.3
Turkmenistan	T10	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.5	1.0
Uzbekistan	T10	2.7	3.0	1.7	2.0	1.7	2.0	1.7	2.0	2.3	1.8
Russia	T10	3.3	4.0	2.3	3.0	2.7	2.3	1.7	1.7	3.3	2.0
CEE	T10	3.0	3.9	2.5	3.0	3.9	2.2	2.9	2.3	3.5	2.5
CIS non-oil	T10	2.7	3.4	1.8	3.0	3.6	1.9	1.9	1.8	3.2	1.8
AKTU (w/o Russia)	T10	2.2	3.1	1.7	2.5	2.3*	1.8	1.9	1.8	2.5	1.8

Notes:

1/ * indicates statistically significant difference in means of CIS oil and CIS non-oil at 10% level using a standard one-sided t-test.

2/ The start of transition varies across countries: t1= 1989 for Hungary and Poland, 1990 for Bulgaria, Czechoslovakia, Romania and former Yugoslavia, 1991 for Albania and the Baltic states and 1992 for the CIS. t5 = t1 + 4 years; t10 = t1 + 9 years Results are not significantly changed if Russia is excluded from the group of CIS oil-rich economies.

Table 4 also reveals, however, that the above result is driven by Turkmenistan and Uzbekistan. Azerbaijan and Kazakhstan record reform progress similar to or even slightly above the CIS average in most dimensions. As mentioned above, Turkmenistan had early access to gas export rents in 1992-93. Moreover, Turkmenistan and Uzbekistan are important cotton producers. Cotton rents in both countries have accrued mainly to the government as a result of state trading in cotton exports and the persistence of the state order system in agriculture, whereby farmers receive only a fraction of the world market price for their produce. Some estimates indicate that agricultural sector rents were as high as 15 per cent of GDP in Turkmenistan in 1998 (Pastor and van Rooden, 2000; Pomfret, 2002). The early and easy availability of resource rents was arguably a key factor in allowing both countries to pursue much less reform-oriented policies than in the rest of the CIS.

By contrast, energy resources in Azerbaijan and Kazakhstan were not immediately available for exploitation and had to be developed first. This was done through a policy of opening up to foreign investment, exemplified by contracts with Chevron and Mobil for the Tengiz oil field in Kazakhstan (signed in 1993) and with a consortium led by BP for the Azeri-Chirag-Gunesli concession areas in Azerbaijan (signed in 1994). These international investors had to be convinced of the business-friendly intentions of the government – a key aspect of their risk calculations. Thus both countries were comparatively reform-minded during much of the 1990s. The presence of important foreign investment and the initial reliance on IFI funding has provided some support to economic reform policies, but how long this can last once major investments have been sunk and oil revenues increase substantially, is an open question. The model would suggest that reduced dependence on foreign financial resources could cause the reform process to slow down or even reverse itself.

3 The Political Economy of Resource Dependence

Having established the importance of resource rents for the AKTU countries and highlighted the way in which these have been allocated, we now turn to a political economy interpretation of the observed patterns. First we show that already during Soviet times, AKTU served as a source of raw materials for the more industrialised western CIS. In return for selling their resources at prices far below world market values, these countries received considerable direct fiscal transfers from the Soviet centre. We then provide a conceptual framework that analyses the consequences of the elimination of these implicit and explicit two-way transfers with the break-up of the Soviet Union.

3.1 From Soviet transfers to domestic rent appropriation

Under the Soviet system, the AKTU countries as well as other republics in the CIS periphery specialised in the extraction of natural resources and the production of cash crops, while receiving manufactured goods from the western CIS. Because of the Soviet Union's biased pricing policy towards industry, the relative prices of raw materials and industrial goods were highly distorted. Producers of primary goods received lower prices compared with producers of industrial goods than they would have received had both traded at world prices. To compensate for these imposed unfavourable terms of trade the CIS periphery received large transfers from the Federation.

A number of papers have attempted to calculate the terms of trade shifts that resulted from the dissolution of the CMEA and the move to market prices in intra-republican trade (Tarr, 1993; Orlowski, 1993). Orlowski's calculations of implicit transfers in Soviet trade as of 1989 are shown in Table 5. It appears that Turkmenistan and Russia were net donors to all other republics, and that the biggest recipients of implicit transfers were the western CIS and the Caucasus, while the AKTU countries with the exception of Azerbaijan neither benefited nor lost much from this system of transfers. This is in part due to the relatively small net energy balances of AKTU, as their energy resources remained under-developed, and in part due to the significant production of final goods in countries such as Kazakhstan and Uzbekistan. The dead-

weight loss associated with this distortionary system of taxes and subsidies did of course represent an unavoidable cost for all involved.

Table 5: Direct and indirect transfers in the Soviet Union

	Indirect transfers	Direct transfers
AKTU		
Azerbaijan	10.09	0.8
Kazakhstan	0.5	8.1
Turkmenistan	-10.81	8.1
Uzbekistan	1.26	9.6
RESOURCE-POOR CASPIAN		
Armenia	9.16	22.7
Georgia	16.02	2.0
Kyrgyzstan	2.72	6.9
Tajikistan	6.08	7.1
WESTERN CIS AND BALTIcs		
Belarus	8.91	-0.1
Estonia	12.08	-0.2
Latvia	10.43	0.5
Lithuania	17.09	-0.1
Moldova	24.05	0.6
Ukraine	3.61	0.3
Russia		
Russia	-3.67	-0.4

Sources: Orlowski (1993); (1995).

Notes: Transfers are defined as positive for net recipients and negative for net donors.

Yet, these numbers may be deceiving in two important respects. First, for many manufactured goods traded within the Soviet Union, a market reference price may not have existed. Orlowski's calculations are based on Goskomstat data, using their information of "world market" prices rather than a true market benchmark.⁹ Primary goods exporters are thus likely to have paid larger effective subsidies than would appear from Table 5. Second, with the exception of Turkmenistan, all AKTU countries were also importers of energy during Soviet times, reflecting the existing cross-border transport infrastructure. Some of this cross-border trade might not have

⁹ The author notes these shortcomings himself and says his calculations are a "plausibility test" (p.1002).

Nature's Blessing or Nature's Curse: The Political Economy of Transition in Resource-Based Economies

taken place under market conditions, and the AKTU countries may have borne an opportunity cost as a result.

The counterpart of being taxed through the system of distorted prices for traded goods was that the AKTU countries received among the largest subsidies from Federal transfers of any region in the former Soviet Union. Table 5 also shows the share of net fiscal transfers in GDP in 1989 based on Orlowski (1995). Armenia is an exception, driven by special support following the 1989 earthquake. Again with the exception of Azerbaijan, the AKTU countries received around 8 per cent of GDP in central transfers, with Kazakhstan and Uzbekistan benefiting the most. The western CIS and the Baltic states, by contrast, made moderate positive contributions into the Federal budget.

With the breakdown of the Soviet Union, both implicit and explicit transfers largely disappeared. Ruling elites in the CIS countries were thus faced with a serious challenge: how to replace implicit and explicit transfers in order to maintain their support base. It is in this respect that access to resource rents becomes crucial.

3.2 Resource rents and economic policy during transition

Our basic framework follows Dalmazzo and de Blasio (2001). In their model, an autocratic government maximises its revenue through rent appropriation by extracting resource wealth directly and by taxing business activity. Economic reform reduces the ability of the government to appropriate rents through both mechanisms, while increasing production of non-resource output. In this set up, the presence of natural resources reduces reform incentives, because the direct effect on rent appropriation outweighs the indirect effect of increased business activity.¹⁰ Dalmazzo and de Blasio also extend the model to the case of foreign aid and show how credible conditionality can lead to the adoption of reform policies, while non-conditional aid is equivalent to resource wealth in its negative effect on reform.

We extend this basic framework with an argument about government turnover at the start of transition. The incumbent government is closely associated with those interest groups that benefited most from the system of explicit and implicit transfers during Soviet times. As these transfers disappear with the break-up of the Soviet Union, incumbent elites will only remain in power if they can find a source of revenues to maintain transfers to their supporters. Natural resources are obviously a

¹⁰ It is of course possible to imagine that reforms would increase effective tax revenues from the business sector and still encourage its growth. In this case, the effect of resources on reform might be immaterial, depending on the weight of the respective revenue sources.

key potential source of revenues in this regard and we therefore would expect government turnover to be lower in resource-rich economies. Indeed, for the Caspian countries, transition simply eliminated the “Moscow loop” in the flow of resources, but did not have more fundamental distributional consequences aside from making some of the middlemen between Moscow and the republics redundant. We might expect this to be reflected in a higher degree of political cohesion and continuity with less of a challenge to the ruling elite than in resource-poor countries.

Looking at political turnover during the early transition period corroborates our general argument (Table 6).

Table 6 - Government turnover and social cohesion in transition economies

	Government turnover (Mean tenure of government in months 1990-98)	Social cohesion (Share of seats held by ex-communists in first parliament)	(Share of seats held by largest non-communist party)
CEE			
Czech Republic	25.5	16	55
Estonia	15.0	0	47
Latvia	20.8	9	43
Lithuania	15.0	14	80
Hungary	13.3	26	31
Poland	14.3	35	38
Slovak Republic	25.5	16	39
Slovenia	52.0	14	17
OTHER CIS			
Armenia	52.5	2	87
Belarus	52.5	79	21
Georgia	49.0	26	63
Kyrgyzstan	53.0	100	0
Moldova	26.5	38	35
Tajikistan	106.0	99	1
Ukraine	52.5	72	28
RUSSIA	105.0	40	40
AKTU			
Azerbaijan	33.0	78	13
Kazakhstan	105.0	94	6
Turkmenistan	108.0	100	0
Uzbekistan	106.0	100	0

Source: EBRD (1999), Chapter 5.

Nature's Blessing or Nature's Curse: The Political Economy of Transition in Resource-Based Economies

Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan all have heads of state who were high communist officials during Soviet times. In the latter three countries these heads of state already stood at the helm of their country at the time of independence. In all countries, moreover, the president has direct control over key natural resources. In contrast, the western CIS (and Eastern Europe) were by and large characterised by a much higher degree of government turnover during the initial years of transition. Moreover, Table 6 reveals that the extent of political cohesion was also much higher in the AKTU countries, indicating the extent to which political preferences were aligned with the interests of the incumbent elites.

While this paper does not try to offer a unified explanation for transition patterns in the whole of the CIS, it is worthwhile exploring the implications of the above arguments for the energy-poor CIS countries. There, implicit and explicit transfers were greatly reduced with no compensating gains from increased rent appropriation from the natural resources sector. This is reflected in higher turnover and less political cohesion. The only compensation for the loss of transfers was international support from IFIs and Western donors. Since this support was conditional on implementing reform, we expect a higher degree of reform in resource-poor countries, even if their governments were not *per se* interested in economic reform. Indeed, the most rapid reform progress during the first four years of transition among the former Soviet countries was made by the Baltic states, Kyrgyzstan and Moldova, while Armenia and Georgia made rapid headway once the regional conflict and instability in the Caucasus subsided. As mentioned, Belarus and to a lesser extent Ukraine are exceptions, as they continued to draw on implicit energy transfers from Russia partially as a result of their control over key energy transit routes. Economic reform could have reduced the ability of the ruling elite to appropriate these transfers and hence reform progress was less in both countries.

One could ask, of course, why resource-rich countries would not reform as well in order to access Western assistance and FDI. To the extent that this assistance outweighed the immediate loss to rent appropriation from reform, this would indeed be expected and we find that Azerbaijan and Kazakhstan chose this route during the early 1990s. As energy resources become more developed and the incumbents strengthen their hold on power, however, we would expect reform incentives to weaken, leading to less progress or even reversal in key reform dimensions. This phase is only beginning now but it points to the challenges ahead.

Finally, it is important to see this interpretation of the political economy of reforms in resource-rich transition economies not as a deterministic model of policy formation. A basic assumption of the model that underlies these stark conclusions is that governments in CIS countries are only interested in their revenues and do not care

about society more generally. Once we allow for a government that cares for social welfare as well as for its own welfare, economic reforms become more likely even in resource-rich economies. This is why government turnover matters. Political competition increases the likelihood that a social welfare maximising government can assume power. Indeed, when the government is only concerned with social welfare it will always reform as long as reforms increase aggregate resources and welfare.

Governments thus always have real policy choices. With this in mind, the final section of the paper looks at the experience of successful resource-rich economies around the world and draws some lessons for longer-term policy.

4 Pathways Out of Excessive Resource Dependence

International evidence suggests that the AKTU countries will have to make special efforts to avoid the “resource curse” of low growth and high volatility characteristic of many other resource-based economies (Sachs and Warner, 1995; Auty and Mikesell, 1998; Leite and Weidmann, 1999; Dalvazzo and de Blasio, 2001; Gylfasson, 2001). Four channels through which resource abundance may slow economic growth are typically highlighted in the literature: a) the Dutch disease; b) neglect of education; c) rent seeking; and d) poor economic policies or overconfidence.

These problems seldom occur in isolation. A typical sequence in a country failing to capitalise on its resource endowments could run as follows (see Auty and Mikesell, 1998). High capital inflows during resource booms have a tendency to push up real wages and erode the competitiveness of the non-resource-based tradable goods sector. To some extent this is unavoidable and an efficient outcome of a resource windfall. However, it is often exacerbated by excessive public spending (i.e. in excess of what could be sustained over the long-term by the additional resource-related income). The allocation of public resources is often on wasteful investment or bloated public sector employment in return for political loyalty, thereby distorting incentives. Large public spending further pushes up the real exchange rate, above its equilibrium level, causing external imbalances and increasing reliance on foreign borrowing to sustain public consumption once commodity prices fall or an important natural resource deposit becomes exhausted. Finally, macroeconomic instability results, investment is further discouraged and growth grinds to a halt (or turns negative).

The evidence presented in this paper suggests that the problems of resource dependence may to some extent already have started to afflict the AKTU countries. They need not fall into the resource trap, however. The policy choices that must be made in order to turn natural resources into a blessing rather than a curse are not intellectually demanding - although they are likely to be politically difficult to implement. A small number of countries have actually made these choices, despite starting out as resource-dependent economies, and as a result have successfully developed. These countries are Botswana, Chile, Malaysia and Thailand.¹¹ The experience of the successful resource-rich countries shows that management of

resource windfalls and economic diversification are central to sustained economic growth. Indeed, in order to shelter itself from possible price swings and make best use of its resources, an economy can either diversify its asset portfolio or its economic production base, or both.

For an economy with exceptionally rich resource endowments, significant diversification of the production structure may not be a realistic aim. If returns to resource exploitation are very high, a high degree of specialisation in production may be a natural outcome, in line with both short-run and long-run or dynamic comparative advantage. However, in such a case, financial portfolio diversification becomes of fundamental importance. Strong budgetary institutions and responsible fiscal policy are important prerequisites for successful portfolio diversification. Governments should only spend the share of resource revenues considered part of permanent income. Resource windfalls (which can be mediated either through the public or through the private sector) should be used to buy foreign assets, repay external debt or to invest in domestic projects with high and long-lasting social rates of return. For this a modern, well-regulated financial sector is needed that can effectively intermediate between domestic savings and international capital markets. In some cases, the creation of a government-owned but independently managed national savings fund can also provide an effective tool for portfolio diversification.¹²

For economies with a variety of production factors, economic diversification is feasible and resource rents could be partially used to lay the foundations to further the growth of the non-resource sector. It would appear that most AKTU countries, with the possible exception of Turkmenistan (which is very highly specialised in natural gas and cotton production) fall into the latter category. Economic diversification can be aided by complementary investments in physical infrastructure and human capital but is probably most directly linked to the investment climate for private business. Predictable government policies, low levels of red tape, stable tax rates and a level playing field for all businesses are the key ingredients of such a positive investment climate.

As the development of AKTU's substantial energy resources progresses, two further challenges will become ever more important. The first is to reform the domestic energy sector itself. Domestic energy producers will hardly be able to raise the external financing required, as long as they remain burdened with providing subsidies to domestic consumers by selling at below world market prices. These subsidies can be maintained because the government largely controls the transport infrastructure needed to access external markets. Yet, precisely this control also

¹¹ Note, of course, that none of these countries is an important oil producer.

¹² On the risks of political influence over national stabilisation funds, see IMF (2000).

Nature's Blessing or Nature's Curse: The Political Economy of Transition in Resource-Based Economies

reduces the attraction of the AKTU countries to foreign investors. A policy to liberalise access to transportation while embarking on serious domestic price reform is thus needed. Again, Kazakhstan has moved furthest in this regard and with the Caspian Pipeline Consortium now has the first non-state-owned pipeline from the Caspian to world markets in operation.

The second challenge will be to create the basis for prudent long-term fiscal management. Both Azerbaijan and Kazakhstan have established national stabilisation funds to manage expected resource windfalls. Their independence from political interference remains yet to be tested. Moreover, such stabilisation funds are likely to be ineffective if not embedded into an overall medium-term fiscal framework, which is till evolving in both countries. Kazakhstan has also introduced a funded pension system, which is expected to boost domestic savings over the medium term, and made progress in strengthening its financial system to better handle the required portfolio diversification. The other AKTU countries lag far behind. In the long run it is likely that fiscal prudence will only be achieved if the government becomes more accountable in all its operations to the population at large. This suggests that in addition to issues of economic management, the question of political reform is likely to force itself onto the agenda sooner or later.

5 Conclusions

This paper has drawn a link between the rather disappointing reform performance of the energy-rich transition countries and their natural resource wealth. We have argued that the incentives of governments to implement reforms in resource-rich economies are reduced, as this would lead to a reduction in their ability to appropriate resource rents. The larger the rents, the less likely are reforms. We find some evidence for this pattern in the experience of the AKTU economies compared with the remainder of the CIS to date.

However, it would be an exaggeration to see resource wealth, even during the past decade, purely as a curse for the AKTU countries. Their energy wealth has allowed them to attract far greater inflows of FDI than other CIS economies, with the corresponding positive impact on domestic suppliers, and technological and business standards. In Azerbaijan and Kazakhstan in particular, this together with the assistance of IFIs has provided an anchor for economic policy that has allowed reform progress to be made during the first decade of independence. Still, judged against its potential, the region's performance has been disappointing. More reform will be needed if the present economic upswing in the region is not to disappear with the next global downturn in oil and gas prices.

Looking ahead, the crucial challenge remains to improve the business climate for private enterprises in order to provide the basis for economic diversification. This issue has dominated during the first ten years and remains possibly the most prominent concern. All four AKTU economies could do more to liberalise foreign trade, simplify domestic licensing and business registration, strengthen financial institutions and improve tax collection practices to make it easier to set up new businesses. Kazakhstan is most advanced in this regard, while in Turkmenistan reforms have hardly begun.

References

R. Auty and R. Mikesell (1998): *Sustainable Development in Mineral Economies*. Clarendon, Oxford University Press.

R. Auty (2001): *Natural Resources, Governance and the Transition in Energy-Rich Azerbaijan, Kazakhstan and Turkmenistan*. Working paper, **0103**. Department of Geography, Lancaster University.

R. Auty (2002): *Avoiding the Resource Curse: Azerbaijan and Kazakhstan*. Lancaster University, Department of Geography, mimeo.

A. Dalmazzo and G. de Blasio (2001): Resources and Incentives to Reform: A Model and Some Evidence on Sub-Saharan African Countries. *IMF Working Paper*, **86**. IMF, Washington, DC.

EBRD (1999, 2000, 2001): *Transition Report*. EBRD, London.

Esanov, A., Raiser, M. and Buiter, W. (2002): Nature's blessing or nature's curse: the political economy of transition in resource-based economies. *EBRD Working Paper*, **66**. EBRD, London.

E. Gürgen et al (1999): Economic Reforms in Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. IMF Occasional Paper, **183**. IMF, Washington, DC.

T. Gylfason (2001): *Nature, Power, and Growth*. CESinfo Working paper, **413**.

IMF (2000): Stabilisation and Savings Funds for Nonrenewable Resources: Experience and Fiscal Policy Implications. *IMF Policy Paper*, November 2000. IMF, Washington, DC.

IMF (2002): *Selected Issues and Statistical Appendix. Country Economic Report 02/41*. IMF, Washington, DC.

Y. Kalyuzhnova, A. Jaffe, D. Lynch, R. Sickles, (eds.) (2001): *Energy in the Caspian Region: Present and Future*. Forthcoming.

C. Leite and J. Weidmann (1999): Does Mother Nature Corrupt? Natural Resources, Corruption and Economic Growth. *IMF Working Paper*, **85**. IMF, Washington, DC.

L. Orlowski (1993): Indirect Transfers in Trade Among Former Soviet Union Republics: Sources, Patterns, and Policy Responses in the Post-Soviet Period. *Europe-Asia Studies*, **45** (6), pp. 1001-1024.

L. Orlowski (1995): Direct Transfers Between the Former Soviet Union Central Budget and the Republics: Past Evidence and Current Implications. *Economics of Planning*, **58** (1), pp. 59-73.

G. Pastor and R. van Rooden (2000): Turkmenistan: the burden of current agricultural policies. *IMF Working Paper*, **98**. IMF, Washington, DC.

R. Pomfret (2002): *Resource Abundance, Governance and Economic Performance in Turkmenistan and Uzbekistan*. University of Adelaide, School of Economics, mimeo.

Renaissance Capital (2002): *Gazprom: The Dawning of a New Valuation Era*. London

J. Sachs and A. Warner (1995a): Natural Resource Abundance and Economic Growth. NBER Working Paper, **5398**.

J. E. Stiglitz (1999): Whither Reform? Ten Years of the Transition. Paper presented at the W.B. Annual Conference on Development Economics, April 1999, Washington D.C.

D. G. Tarr (1993): How moving to world prices affects the terms of trade in 15 countries of the former Soviet Union. *Policy Research Working Paper*, **1074**, The World Bank, Washington, DC.

A. Tornell and P. Lane (1999): The Voracity Effect. *American Economic Review*, **89** (1), pp. 22-46.

J. Walters (2000): Caspian oil and gas: Mitigating political risks for private participation. *The Centre for Energy, Petroleum and Mineral Law and Policy Journal*, **7**, Article 5.

World Bank (2000): World Development Indicators. The World Bank, Washington, DC.

The following papers have been published so far:

No. 1	Ulrike Grote, Arnab Basu, Diana Weinhold	Child Labor and the International Policy Debate Zentrum für Entwicklungsforschung (ZEF), Bonn, September 1998, pp. 47.
No. 2	Patrick Webb, Maria Iskandarani	Water Insecurity and the Poor: Issues and Research Needs Zentrum für Entwicklungsforschung (ZEF), Bonn, Oktober 1998, pp. 66.
No. 3	Matin Qaim, Joachim von Braun	Crop Biotechnology in Developing Countries: A Conceptual Framework for Ex Ante Economic Analyses Zentrum für Entwicklungsforschung (ZEF), Bonn, November 1998, pp. 24.
No. 4	Sabine Seibel, Romeo Bertolini, Dietrich Müller-Falcke	Informations- und Kommunikationstechnologien in Entwicklungsländern Zentrum für Entwicklungsforschung (ZEF), Bonn, January 1999, pp. 50.
No. 5	Jean-Jacques Dethier	Governance and Economic Performance: A Survey Zentrum für Entwicklungsforschung (ZEF), Bonn, April 1999, pp. 62.
No. 6	Mingzhi Sheng	Lebensmittelhandel und Kosumtrends in China Zentrum für Entwicklungsforschung (ZEF), Bonn, May 1999, pp. 57.
No. 7	Arjun Bedi	The Role of Information and Communication Technologies in Economic Development — A Partial Survey Zentrum für Entwicklungsforschung (ZEF), Bonn, May 1999, pp. 42.
No. 8	Abdul Bayes, Joachim von Braun, Rasheda Akhter	Village Pay Phones and Poverty Reduction: Insights from a Grameen Bank Initiative in Bangladesh Zentrum für Entwicklungsforschung (ZEF), Bonn, June 1999, pp. 47.
No. 9	Johannes Jütting	Strengthening Social Security Systems in Rural Areas of Developing Countries Zentrum für Entwicklungsforschung (ZEF), Bonn, June 1999, pp. 44.
No. 10	Mamdouh Nasr	Assessing Desertification and Water Harvesting in the Middle East and North Africa: Policy Implications Zentrum für Entwicklungsforschung (ZEF), Bonn, July 1999, pp. 59.
No. 11	Oded Stark, Yong Wang	Externalities, Human Capital Formation and Corrective Migration Policy Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 17.

ZEF Discussion Papers on Development Policy

No. 12 John Msuya Nutrition Improvement Projects in Tanzania: Appropriate Choice of Institutions Matters
Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 36.

No. 13 Liu Junhai Legal Reforms in China
Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 90.

No. 14 Lukas Menkhoff Bad Banking in Thailand? An Empirical Analysis of Macro Indicators
Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 38.

No. 15 Kaushalesh Lal Information Technology and Exports: A Case Study of Indian Garments Manufacturing Enterprises
Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 24.

No. 16 Detlef Virchow Spending on Conservation of Plant Genetic Resources for Food and Agriculture: How much and how efficient?
Zentrum für Entwicklungsforschung (ZEF), Bonn, September 1999, pp. 37.

No. 17 Arnulf Heuermann Die Bedeutung von Telekommunikationsdiensten für wirtschaftliches Wachstum
Zentrum für Entwicklungsforschung (ZEF), Bonn, September 1999, pp. 33.

No. 18 Ulrike Grote, Arnab Basu, Nancy Chau The International Debate and Economic Consequences of Eco-Labeling
Zentrum für Entwicklungsforschung (ZEF), Bonn, September 1999, pp. 37.

No. 19 Manfred Zeller Towards Enhancing the Role of Microfinance for Safety Nets of the Poor
Zentrum für Entwicklungsforschung (ZEF), Bonn, October 1999, pp. 30.

No. 20 Ajay Mahal, Vivek Srivastava, Deepak Sanan Decentralization and Public Sector Delivery of Health and Education Services: The Indian Experience
Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2000, pp. 77.

No. 21 M. Andreini, N. van de Giesen, A. van Edig, M. Fosu, W. Andah Volta Basin Water Balance
Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 29.

No. 22 Susanna Wolf, Dominik Spoden Allocation of EU Aid towards ACP-Countries
Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 59.

No. 23 Uta Schultze Insights from Physics into Development Processes: Are Fat Tails Interesting for Development Research? Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 21.

No. 24 Joachim von Braun, Ulrike Grote, Johannes Jütting Zukunft der Entwicklungszusammenarbeit Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 25.

No. 25 Oded Stark, You Qiang Wang A Theory of Migration as a Response to Relative Deprivation Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 16.

No. 26 Doris Wiesmann, Joachim von Braun, Torsten Feldbrügge An International Nutrition Index – Successes and Failures in Addressing Hunger and Malnutrition Zentrum für Entwicklungsforschung (ZEF), Bonn, April 2000, pp. 56.

No. 27 Maximo Torero The Access and Welfare Impacts of Telecommunications Technology in Peru Zentrum für Entwicklungsforschung (ZEF), Bonn, June 2000, pp. 30.

No. 28 Thomas Hartmann-Wendels, Lukas Menkhoff Could Tighter Prudential Regulation Have Saved Thailand's Banks? Zentrum für Entwicklungsforschung (ZEF), Bonn, July 2000, pp. 40.

No. 29 Mahendra Dev Economic Liberalisation and Employment in South Asia Zentrum für Entwicklungsforschung (ZEF), Bonn, August 2000, pp. 82.

No. 30 Noha El-Mikawy, Amr Hashem, Maye Kassem, Ali El-Sawi, Abdel Hafez El-Sawy, Mohamed Showman Institutional Reform of Economic Legislation in Egypt Zentrum für Entwicklungsforschung (ZEF), Bonn, August 2000, pp. 72.

No. 31 Kakoli Roy, Susanne Ziemek On the Economics of Volunteering Zentrum für Entwicklungsforschung (ZEF), Bonn, August 2000, pp. 47.

No. 32 Assefa Admassie The Incidence of Child Labour in Africa with Empirical Evidence from Rural Ethiopia Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2000, pp. 61.

No. 33 Jagdish C. Katyal, Paul L.G. Vlek Desertification - Concept, Causes and Amelioration Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2000, pp. 65.

ZEF Discussion Papers on Development Policy

No. 34 Oded Stark
On a Variation in the Economic Performance of Migrants
by their Home Country's Wage
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2000, pp. 10.

No. 35 Ramón Lopéz
Growth, Poverty and Asset Allocation: The Role of the
State
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2001, pp. 35.

No. 36 Kazuki Taketoshi
Environmental Pollution and Policies in China's Township
and Village Industrial Enterprises
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2001, pp. 37.

No. 37 Noel Gaston,
Douglas Nelson
Multinational Location Decisions and the Impact on
Labour Markets
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 2001, pp. 26.

No. 38 Claudia Ringler
Optimal Water Allocation in the Mekong River Basin
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 2001, pp. 50.

No. 39 Ulrike Grote,
Stefanie Kirchhoff
Environmental and Food Safety Standards in the Context
of Trade Liberalization: Issues and Options
Zentrum für Entwicklungsforschung (ZEF), Bonn,
June 2001, pp. 43.

No. 40 Renate Schubert,
Simon Dietz
Environmental Kuznets Curve, Biodiversity and
Sustainability
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2001, pp. 30.

No. 41 Stefanie Kirchhoff,
Ana María Ibañez
Displacement due to Violence in Colombia: Determinants
and Consequences at the Household Level
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2001, pp. 45.

No. 42 Francis Matambalya,
Susanna Wolf
The Role of ICT for the Performance of SMEs in East
Africa – Empirical Evidence from Kenya and Tanzania
Zentrum für Entwicklungsforschung (ZEF), Bonn,
December 2001, pp. 30.

No. 43 Oded Stark,
Ita Falk
Dynasties and Destiny: On the Roles of Altruism and
Impatience in the Evolution of Consumption and
Bequests
Zentrum für Entwicklungsforschung (ZEF), Bonn,
December 2001, pp. 20.

No. 44 Assefa Admassie Allocation of Children's Time Endowment between Schooling and Work in Rural Ethiopia
Zentrum für Entwicklungsforschung (ZEF), Bonn, February 2002, pp. 75.

No. 46 Torsten Feldbrügge, Joachim von Braun Is the World Becoming A More Risky Place?
- Trends in Disasters and Vulnerability to Them –
Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2002, pp. 42

No. 47 Joachim von Braun, Peter Wobst, Ulrike Grote "Development Box" and Special and Differential Treatment for Food Security of Developing Countries: Potentials, Limitations and Implementation Issues
Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2002, pp. 28

No. 48 Shyamal Chowdhury Attaining Universal Access: Public-Private Partnership and Business-NGO Partnership
Zentrum für Entwicklungsforschung (ZEF), Bonn, June 2002, pp. 37

No. 49 L. Adele Jinadu Ethnic Conflict & Federalism in Nigeria
Zentrum für Entwicklungsforschung (ZEF), Bonn, September 2002, pp. 45

No. 50 Oded Stark, Yong Wang Overlapping
Zentrum für Entwicklungsforschung (ZEF), Bonn, August 2002, pp. 17

No. 51 Roukayatou Zimmermann, Matin Qaim Projecting the Benefits of Golden Rice in the Philippines
Zentrum für Entwicklungsforschung (ZEF), Bonn, September 2002, pp. 33

No. 52 Gautam Hazarika, Arjun S. Bedi Schooling Costs and Child Labour in Rural Pakistan
Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2002, pp. 34

No. 53 Margit Bussmann, Indra de Soysa, John R. Oneal The Effect of Foreign Investment on Economic Development and Income Inequality
Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2002, pp. 35

No. 54 Maximo Torero, Shyamal K. Chowdhury, Virgilio Galdo Willingness to Pay for the Rural Telephone Service in Bangladesh and Peru
Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2002, pp. 39

No. 55 Hans-Dieter Evers, Thomas Menkhoff Selling Expert Knowledge: The Role of Consultants in Singapore's New Economy
Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2002, pp. 29

No. 56 Qiuxia Zhu
Stefanie Elbern
Economic Institutional Evolution and Further Needs for Adjustments: Township Village Enterprises in China
Zentrum für Entwicklungsforschung (ZEF), Bonn,
November 2002, pp. 41

No. 57 Ana Devic
Prospects of Multicultural Regionalism As a Democratic Barrier Against Ethnonationalism: The Case of Vojvodina, Serbia's 'Multiethnic Haven'
Zentrum für Entwicklungsforschung (ZEF), Bonn,
December 2002, pp. 29

No. 58 Heidi Wittmer
Thomas Berger
Clean Development Mechanism: Neue Potenziale für regenerative Energien? Möglichkeiten und Grenzen einer verstärkten Nutzung von Bioenergiesträgern in Entwicklungsländern
Zentrum für Entwicklungsforschung (ZEF), Bonn,
December 2002, pp. 81

No. 59 Oded Stark
Cooperation and Wealth
Zentrum für Entwicklungsforschung (ZEF), Bonn,
January 2003, pp. 13

No. 60 Rick Auty
Towards a Resource-Driven Model of Governance: Application to Lower-Income Transition Economies
Zentrum für Entwicklungsforschung (ZEF), Bonn,
February 2003, pp. 24

No. 61 Andreas Wimmer
Indra de Soysa
Christian Wagner
Political Science Tools for Assessing Feasibility and Sustainability of Reforms
Zentrum für Entwicklungsforschung (ZEF), Bonn,
February 2003, pp. 34

No. 62 Peter Wehrheim
Doris Wiesmann
Food Security in Transition Countries: Conceptual Issues and Cross-Country Analyses
Zentrum für Entwicklungsforschung (ZEF), Bonn,
February 2003, pp. 45

No. 63 Rajeev Ahuja
Johannes Jütting
Design of Incentives in Community Based Health Insurance Schemes
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2003, pp. 27

No. 64 Sudip Mitra
Reiner Wassmann
Paul L.G. Vlek
Global Inventory of Wetlands and their Role in the Carbon Cycle
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2003, pp. 44

No. 65 Simon Reich
Power, Institutions and Moral Entrepreneurs
Zentrum für Entwicklungsforschung (ZEF), Bonn,
March 2003, pp. 46

ZEF Discussion Papers on Development Policy

No. 66 Lukas Menkhoff
Chodechai Suwanaporn
The Rationale of Bank Lending in Pre-Crisis Thailand
Zentrum für Entwicklungsforschung (ZEF), Bonn,
April 2003, pp. 37

No. 67 Ross E. Burkhart,
Indra de Soysa
Open Borders, Open Regimes? Testing Causal Direction
between Globalization and Democracy, 1970–2000
Zentrum für Entwicklungsforschung (ZEF), Bonn,
April 2003, pp. 24

No. 68 Arnab K. Basu
Nancy H. Chau
Ulrike Grote
On Export Rivalry and the Greening of Agriculture – The
Role of Eco-labels
Zentrum für Entwicklungsforschung (ZEF), Bonn,
April 2003, pp. 38

No. 69 Gerd R. Rücker
Soojin Park
Henry Ssali
John Pender
Strategic Targeting of Development Policies to a Complex
Region: A GIS-Based Stratification Applied to Uganda
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 2003, pp. 41

No. 70 Susanna Wolf
Private Sector Development and Competitiveness in Ghana
Zentrum für Entwicklungsforschung (ZEF), Bonn,
May 2003, pp. 29

No. 71 Oded Stark
Rethinking the Brain Drain
Zentrum für Entwicklungsforschung (ZEF), Bonn,
June 2003, pp. 17

No. 72 Andreas Wimmer
Democracy and Ethno-Religious Conflict in Iraq
Zentrum für Entwicklungsforschung (ZEF), Bonn,
August 2003, pp. 23

No. 73 Oded Stark
Tales of Migration without Wage Differentials: Individual,
Family, and Community Contexts
Zentrum für Entwicklungsforschung (ZEF), Bonn,
September 2003, pp. 15

No. 74 Holger Seebens
Peter Wobst
The Impact of Increased School Enrollment on Economic
Growth in Tanzania
Zentrum für Entwicklungsforschung (ZEF), Bonn,
October 2003, pp. 25

No. 75 Benedikt Korf
Ethnicised Entitlements? Property Rights and Civil War
in Sri Lanka
Zentrum für Entwicklungsforschung (ZEF), Bonn,
November 2003, pp. 27

No. 76 Wolfgang Werner
Toasted Forests – Evergreen Rain Forests of Tropical Asia
under Drought Stress
Zentrum für Entwicklungsforschung (ZEF), Bonn,
Dezember 2003, pp. 46

No. 77 Appukuttannair
Damodaran
Stefanie Engel
Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts
Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2003, pp. 44

No. 78 Eric T. Craswell
Ulrike Grote
Julio Henao
Paul L.G. Vlek
Nutrient Flows in Agricultural Production and International Trade: Ecology and Policy Issues
Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 59

No. 79 Richard Pomfret
Resource Abundance, Governance and Economic Performance in Turkmenistan and Uzbekistan
Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 20

No. 80 Anil Markandya
Gains of Regional Cooperation: Environmental Problems and Solutions
Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 24

No. 81 Akram Esanov,
Martin Raiser,
Willem Buiter
Nature's Blessing or Nature's Curse: The Political Economy of Transition in Resource-Based Economies
Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 22

ISSN: 1436-9931

The papers can be ordered free of charge from:

Zentrum für Entwicklungsforschung (ZEF)
Center for Development Research
Walter-Flex-Str. 3
D – 53113 Bonn, Germany

Phone: +49-228-73-1861
Fax: +49-228-73-1869
E-Mail: zef@uni-bonn.de
<http://www.zef.de>