

Azerbaijan Republic: Selected Issues

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AZERBAIJAN REPUBLIC

Selected Issues

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I. DOMESTIC ENERGY PRODUCT PRICING IN AN OIL-EXPORTING COUNTRY: THE CASE OF AZERBAIJAN

A. Introduction¹

1. **Azerbaijan is endowed with large oil and gas resources, estimated at 7.0 billion barrels (0.6 percent of proven world oil reserves) and 48.4 trillion cubic feet (0.8 percent of proven world gas reserves), respectively.** After a long period of decline in oil production, oil output started to increase in mid-1990s, to reach 0.3 million barrels per day in 2003, and is expected to increase sharply in 2005, reaching a maximum of 1.3 million barrels per day in 2010. This boost to oil production capacity is attributable to substantial investments implemented in cooperation with international oil companies during the last five years. As in many other developing oil-producing countries, domestic energy prices are heavily subsidized in Azerbaijan.

2. **Governments of oil-producing developing countries often keep prices of domestic energy products below their world market levels.** Inherently unstable world market prices of energy products provide a rationale for these governments to step in to protect the welfare of domestic consumers, especially the poor, from excessive price changes. Another argument often employed by governments of oil-producing countries is that the country is rich in exhaustible natural resources, and cheap provision of energy products is the state's social obligation. The economic literature provides a number of counter-arguments to this reasoning. Selling energy products domestically at a lower price than could have been obtained by exporting these products results in implicit subsidization of energy consumption, a loss of valuable revenues for the government, allocation inefficiencies, and negative externalities.

3. **During the last three years, the government of Azerbaijan has made substantial progress in dealing with energy-related subsidies.** Indeed, the latter were reduced from an estimated 22 percent of GDP in 2000 to around 10 percent of GDP in 2003 (Table 1.1).² The elimination of remaining energy subsidies will represent an important challenge for the Azeri authorities, in particular if world market oil prices were to remain at current levels, which are substantially higher than

Table 1.1. Azerbaijan: Estimated Fiscal and Quasi-Fiscal Energy-Related Subsidies, 2003

	2003
Total fiscal and quasi-fiscal subsidies (bln. manats)	3,418
Fiscal subsidies 1/	1,895
Azerenergy	1,753
Azerigas	142
Quasi-fiscal subsidies 2/	1,524
Total fiscal and quasi-fiscal subsidies (in percent of GDP)	9.8
Fiscal subsidies 1/	5.4
Azerenergy	5.0
Azerigas	0.4
Quasi-fiscal subsidies 2/	4.3

Source: Ministry of Finance of Azerbaijan; and Fund staff estimates.

1/ Tax credits allocated to SOCAR for subsidies provided to Azerenergy and Azerigas.

2/ Subsidies due to underpricing of domestically sold products and underpayments for electricity imports and gas deliveries not reflected in the budget.

¹ The primary authors are Koba Gvenetadze and Eric Le Borgne.

² For details of assessing implicit quasi-fiscal subsidies see IMF (2002).

the averages for the last 10 years. A recently approved Long-Term Strategy of Oil Revenue Management and the government's commitment to revise energy prices annually in the context of annual budgets are key steps to intensify reform efforts in this area.

4. **The paper reviews the current scope and consequences of underpricing of domestic energy products and explores options for further energy price reforms in Azerbaijan.** Together with the oil and gas sectors, the electrical power sector is also considered to the extent it uses underpriced energy products as inputs for electricity generation. The extent of underpricing is estimated relative to international reference prices, which could be based on import or export parities. This paper relies on import parity reference prices for petroleum products for the following reasons: (i) for petroleum resources, which are non-renewable, import parity prices represent a measure of the opportunity cost; and (ii) import parity promotes more efficient outcomes, as imported products would be able to compete with domestically refined products. For natural gas, since Azerbaijan is currently a net gas importer, import parity is also the proper reference price to use. In 2004, Azerbaijan was importing gas from Russia at a price of US\$52 per thousand cubic meters.

5. **The paper is organized as follows.** Section B provides a summary of current domestic energy product pricing policies and describes inefficiencies arising from underpricing of energy products in Azerbaijan. Section C makes a case for a two-stage approach to energy price reform. In the first stage, domestic energy prices need to be aligned with world market levels, and the paper presents a number of illustrative scenarios incorporating various assumptions on the pace of adjustment, reference world market prices, and price and volume elasticities. Once the gap between domestic and world energy prices has been eliminated, the authorities will need to proceed to the second stage of price reform and consider options for energy price adjustment mechanisms, aiming at preventing price gaps from re-emerging. Section D concludes and recommends moving toward world market energy prices in 1-3 years and adopting a rules-based smoothing mechanism for energy price adjustment thereafter.

B. Current Domestic Energy Product Pricing Policies and Their Consequences in Azerbaijan

Energy prices in Azerbaijan

6. **The domestic market for oil products has been tightly regulated by the government since Azerbaijan gained independence.** Azerbaijan is largely self-sufficient in oil products because of its substantial endowment of exhaustible mineral deposits and existing refining capacity. In the period September 1993–November 2004, the Cabinet of Ministers adjusted oil product prices 15 times to reduce gaps between domestic and world market prices that had widened because of movements in world oil product prices and exchange rate depreciation. Despite these adjustments, both wholesale and retail prices of most oil products were well below world market prices for the most part of this period.

7. **The last adjustment in energy products prices took place in November 2004 as a part of the government's broader strategy to gradually raise domestic petroleum products prices toward world market levels.** The government increased both wholesale and retail prices of most oil products by 10-12 percent, reducing a large price gap with import reference prices,³ which has widened since the previous adjustment to retail prices undertaken in February 2003. The November 2004 price increases were implemented mainly through increased indirect taxes, as the ex-refinery prices of petroleum products were left unchanged. Despite these increases, wholesale prices for key refined oil products, including taxes, are still 19 to 69 percent below the import reference prices (Table 1.2).

8. **While Azerbaijan is self-sufficient in oil products, it needs to import about 3 billion cubic meters (bcm) of natural gas annually to meet its domestic consumption demand of 7 bcm.**⁴ As in the case of oil products, currently both wholesale and retail prices of natural gas are regulated by the state. There are separate tariffs for residential and business consumers. The Cabinet of Ministers implemented four adjustments to natural gas prices in the period September 1993–November 2004.

9. **Together with oil product prices, in November 2004 the government also increased domestic gas prices for residential consumers and unified them for businesses.** This was motivated by the large financial losses of the State Oil Company of Azerbaijan Republic (SOCAR)—the single producer, importer, and provider of natural gas to the domestic market—and Azerigas—the national gas company. These losses arose because of the low domestic price for residential consumers (US\$7.26 per thousand cubic meters (tcm)), which, before the increase, was substantially below the import price of US\$52 per tcm (which is the marginal cost), as well as the average cost of gas of US\$32 per tcm (World Bank, 2004). The new tariff for residential consumers at US\$16.50 per tcm and the unified business tariff at US\$46 per tcm are now closer to cost recovery. This price increase, together with the intensification of the program to install gas meters for households, will in due course help reduce waste of gas. The other important issue facing the gas sector is low collection of tariffs due, which is currently estimated at about 50 percent.

³ The reference price corresponds to the refinery price of the Mediterranean market in Italy plus transportation and delivery costs, as well as VAT. The latter is included as there is no reason to exclude energy products from VAT imposition.

⁴ By 2006, natural gas produced from the Azeri-Chirag-Guneshli oil field will be delivered free of charge under the associated Production Sharing Agreement, and the production from the Shah-Deniz gas field will begin. However, based on the current projection of domestic demand, even these deliveries are unlikely to be sufficient to eliminate the need for gas imports.

Table 1.2. Azerbaijan: Domestic Prices of Selected Petroleum Products, 2004 1/

	Gasoline 92		Diesel fuel		Fuel oil (Mazut)		Jet fuel		Kerosene		Naphtha	
	/2	/3	/2	/3	/2	/3	/2	/3	/2	/3	/2	/3
Ex-refinery price	952	952	645	645	300	300	652	622	538	538	661	661
Excise tax	617	839	0	97	0	0	0	78	15	120	0	53
Delivery cost (including VAT)	47	47	37	41	35	35	0	35	41	41	0	0
Wholesale price (including VAT) 4/	1,899	2,162	797	916	389	389	769	861	694	818	780	842
Retail Prices (including VAT)	2,096	2,358	952	1,071	...	...	...	...	868	992	...	...
	(In U.S. dollars per ton)											
Ex-refinery price	194	194	131	131	61	61	133	127	110	110	135	135
Excise tax	126	171	0	20	0	0	0	16	3	24	0	11
Delivery cost (including VAT)	10	10	8	8	7	7	0	7	8	8	0	0
Wholesale price (including VAT) 4/	387	440	162	186	79	79	157	175	141	167	159	171
Retail Prices (including VAT)	427	480	194	218	...	...	...	...	177	202	...	...
FOB (Mediterranean) price	412	412	352	352	168	168	387	387	371	371	356	356
Price at Baku's port 5/	454	454	390	390	207	207	426	426	410	410	397	397
Delivery cost	8	8	7	7	6	6	6	6	7	7	0	0
Reference wholesale price (including taxes)—import parity	545	545	468	468	251	251	510	510	492	492	468	468
Reference wholesale price (including taxes)—export parity 6/	457	457	392	392	153	153	...	...	...	...	386	386
Domestic wholesale price (including taxes)	387	440	162	186	79	79	157	175	141	167	159	171
As percentage of import parity reference price	71	81	35	40	31	31	31	34	29	34	34	37
As percentage of export parity reference price	85	96	41	47	51	51	...	...	...	...	41	44

Source: Cabinet of Ministers Decrees No. 20 and No. 165, and Fund staff estimates.

1/ Represent more than 90 percent of production. Mazut is mostly used by Azerenergy and for exports. Naphtha (hydrocarbon mixtures used chiefly as solvents and diluents) is used by the chemical industry.

2/ According to Cabinet of Ministers Decree No. 20 (effective from February 10, 2003 to November 1, 2004), and staff estimates.

3/ According to Cabinet of Ministers Decree No. 165 (effective from November 2, 2004 onwards), and staff estimates.

4/ The wholesale price is obtained by adding the ex-refinery, excises and delivery costs (all including VAT at 18 percent).

5/ The transportation cost can vary from US\$15 to as high as US\$60 per ton, depending if it comes from the region (Turkmenistan) or from Europe. It also depends on the type of product and quantities bought.

6/ Calculated by subtracting transportation cost from Platts' Mediterranean CIF price (as of August 1, 2004).

10. **The electrical power sector benefits from the underpricing of domestic energy inputs.** Azerenergy—the national electricity generating company—receives underpriced fuel oil and gas from SOCAR. Not only are current electricity tariffs insufficient to cover operating, maintenance, and underpriced input costs and provide funds for necessary investments in the sector, a low level of collection on payments due, estimated at 34 percent in 2002, compounds the plight of the electricity sector.

Inefficiencies Arising from Underpricing

11. **Energy product prices that are substantially below world market prices lead to a loss of allocation efficiencies in both production and consumption.** Productive

inefficiency arises as energy prices do not reflect the true resource cost and create incentives for producers to adopt energy-intensive technologies over and above the socially optimal level. This is, for example, true for electricity production in Azerbaijan, where, according to World Bank (2004), fuel input to electrical output compares relatively unfavorably with Baltics, Russia, and other countries of the former Soviet Union (BRO), putting Azerbaijan second only to Kazakhstan, another oil-producing country in the region (Table 1.3). While there are no reliable data on the petrochemical industry in Azerbaijan, it is clear that underpricing of inputs does not provide incentives for using efficient technologies in this sector.

Table 1.3. Selected BRO Countries: Fuel Input and Electrical Output, 2003

	grams per kilowatt hour
Armenia	375
Azerbaijan	410
Kazakhstan	466
Latvia	233
Tajikistan	365
Ukraine	373

Source: World Bank (2004).

12. **Similarly, as prices do not reflect the true opportunity costs of consumption, consumers over-utilize energy-intensive products.** According to World Bank (2004), while electricity consumption relative to GDP is high in all BRO countries, Azerbaijan is one of the highest consumers of electricity (Table 1.4). Oil intensity per unit of purchasing power parity adjusted GDP is also quite high in Azerbaijan compared to some BRO and other developing countries (Table 1.5).

Table 1.4. BRO Countries: Annual Electricity Consumption Per Capita Relative to GDP Per Capita, 2001

	Kilowatt hour Electricity Consumption Per Capita	US\$ GDP Per Capita	Ratio
Armenia	1,127	700	1.6
Azerbaijan	1,846	660	2.8
Belarus	2,676	1,300	2.1
Estonia	3,764	3,930	1.0
Georgia	718	600	1.2
Kazakhstan	2,850	1,350	2.1
Kyrgyz Republic	1,351	280	4.8
Latvia	1,943	3,260	0.6
Lithuania	1,851	3,340	0.6
Moldova	785	400	2.0
Russia	4,297	1,800	2.4
Tajikistan	2,151	170	12.7
Turkmenistán	1,231	1,090	1.1
Ukraine	2,217	720	3.1
Uzbekistan	1,634	320	5.1

Source: World Bank (2004).

13. **Subsidization of energy product prices also raises environmental concerns.** Given that the use of many energy products is associated with negative effects on the environment, especially where there is a weak environmental regulatory framework (such as in Azerbaijan), economic theory suggests that energy product prices should be higher than those set by the market alone. Gupta et al. (2003) recommends using the cost of \$0.1 per liter of gasoline to capture its externality in developing countries. Given 457 thousand tons of

gasoline consumption in Azerbaijan, the externality cost is estimated at US\$54.7 million or 0.6 percent of GDP in 2003. As data in Table 1.6 show, the emission of environmentally harmful carbon dioxide (CO₂), which is the result of fossil fuel combustion for power generation, transport, industry, and domestic use, is very high in Azerbaijan compared to other BRO countries.

14. Subsidization of energy products through underpricing results in significant fiscal costs. The extent of the loss is a function of the price differential and the magnitudes of cross-border smuggling and officially tolerated price arbitrage by domestic companies, as well as amounts of undercollection on tariffs charged. The Azeri authorities have explicitly reflected some energy-related subsidies in the budget since 2002, including (i) the cost of electricity and gas utilities' underpayments stemming from poor collection; and (ii) the compensation for the provision of sufficient fuel and gas for electricity generation (Table 1.1). These subsidies are offset by tax credits granted to SOCAR against its clearance of tax arrears and current tax liabilities. However, the quasi-fiscal subsidies related to underpricing are not presented in budget documents nor is information on their size widely disseminated. This stands in contrast with good fiscal management, which requires explicit accounting of all government activities in the economy and the associated costs. As a result, it is difficult to have a public debate on the validity of subsidy policies and accurately assess the opportunity cost of underpricing energy products to society.

15. Even if explicitly accounted for, underpricing of energy products is effectively a non-targeted subsidy. It disproportionately benefits higher income households since they consume larger quantities of petroleum products and electricity and, therefore, benefit relatively more from subsidies (Gupta et al., 2003). This argument applies to Azerbaijan, where on average the richest 20 percent of population of the capital city Baku consumed 5 percent more electricity per month than the poorest 20 percent in 2002 (Azerbaijan, Poverty and Social Impact Analysis, 2004). The difference in consumption in regions outside Baku is presumably higher but no accurate data are available.

16. There is also a welfare cost of underpricing. Deadweight welfare cost is the difference between foregone government revenue because of subsidization and the increase in consumer's surplus due to subsidized prices. The consumer surplus represents the difference between what a person is willing to pay for a product and the amount at which this

Table I.5. Selected Countries: Oil Consumption Intensity Per Unit of GDP, 2002 1/

	barrel/US\$ GDP
Azerbaijan	0.102
Belarus	0.069
Kazakhstan	0.084
Lithuania	0.054
Poland	0.038
Turkey	0.055
Ukraine	0.038
Uzbekistan	0.119

Source: World Bank data and BP Statistical Review of World Energy.
1/ PPP adjusted GDP.

Table 1.6. BRO Countries: Carbon Dioxide Emissions (average, 1995-2000)

Country	In kg per US\$1 of GDP 1/
Armenia	1.91
Azerbaijan	8.82
Belarus	3.78
Estonia	3.83
Georgia	1.35
Kazakhstan	6.28
Kyrgyz Republ	2.72
Latvia	1.47
Lithuania	1.79
Moldova	5.74
Russia	3.69
Tajikistan	4.50
Turkmenistan	13.30
Ukraine	8.64
Uzbekistan	7.47

Source: World Development Indicators.

1/ PPP-adjusted GDP at 1995 prices.

product can be bought. In Azerbaijan, the deadweight cost is projected at about 1 percent of GDP in 2005.⁵

C. Reform Options for Domestic Energy Product Pricing

Moving Toward World Market Prices

17. **In Azerbaijan, first, energy prices will need to increase to the levels of world market prices, and, subsequently, a mechanism for their adjustment should be chosen to prevent a re-emergence of price gaps.** The government of Azerbaijan has chosen to bring domestic energy prices to world levels through annual step adjustments in the context of annual budget approval. While this decision in part reflects difficulties to undertake unpopular measures, it also accounts for the fact that the implementation of supporting structural reforms might take time. In particular, lack of targeted social assistance and structural problems with collection of energy tariff payments, as well as high energy intensity in production, are legitimate concerns justifying a gradual adjustment to catch up with import reference prices. Moreover, provided that increases in tariffs are accompanied by improvements in the quality of service, including uninterrupted access to power and natural gas, and a more widespread use of gas meters rather than the current system of normative consumption, there can be expected a greater willingness by consumers to pay higher tariffs for energy supplies. No matter how difficult supporting reforms are, it should be borne in mind that an overly long adjustment period may dilute the political will to deal with energy underpricing, perpetuate the distortions and their effects, and hamper the speedy implementation of other reforms that are inter-related to it (Fetini and Bacon, 1999).

18. **The price adjustment undertaken in November 2004 is an important step on the way toward eliminating energy product underpricing.** The net direct impact of this measure on the 2005 budget is estimated to be positive—about 1.5 percent of non-oil GDP. The main impact is expected to come from an increase in revenue of 0.9 percent of non-oil GDP, on account of higher excise revenue on petroleum products (0.7 percent of non-oil GDP), as well as VAT and royalty.⁶

⁵ The deadweight cost is calculated using constant compensated elasticity of demand function given in Gupta et al. (2003).

⁶ The (small) increase in royalty taxes stems from the increase in the wholesale price of gas.

19. Expenditure is projected to decline by 0.7 percent of non-oil GDP on account of energy price adjustments.

In particular, the subsidy to Azerigas is projected to decline (Table 1.7), as weighted average gas prices increased to US\$27 per tcm in November 2004, though they are still below the level (US\$32 per tcm) required to cover production and import costs (World Bank, 2004). Since the price of fuel oil (mazut) was left unchanged, the subsidy to Azerenergy, the other main recipient of budgetary subsidies and the main consumer of domestically produced fuel oil (as it is an input into its production of electricity) will not be affected by the petroleum price increases. At the same time, some expenditure items will increase on account of higher transportation and heating costs of ministries and budgetary agencies, and some very limited direct compensation for the poor (less than 0.1 percent of GDP). Given that there is no appropriate social assistance targeting mechanism, the government instead decided to increase both the minimum wage and the minimum pension in 2005, which is not reflected in the net impact of the November energy price adjustment on the budget. While this measure provides a short-term patch to the issue of social protection, it should not be used in the future in place of targeted mechanisms.

Table 1.7. Azerbaijan: Effects on the 2005 Budget of Increasing Domestic Petroleum Product and Gas Prices in November 2004
(In percent of 2005 non-oil GDP).

	2005
Revenue	0.9
VAT	0.1
Excises	0.7
Royalty	0.0
Expenditure	-0.7
Energy subsidies	-0.8
Direct compensations	0.1
Memorandum items:	
Total revenue and grants	44.1
Total expenditure	40.6

Source: Fund staff projections.

20. Keeping energy prices unchanged in the medium term (2005-08) would represent a large fiscal cost (Table 1.8). If the current import reference prices remained unchanged in the medium term, the present value of foregone revenue would amount to US\$2.9 billion or 33 percent of 2004 GDP (Table 1.8, Scenario I). If import reference prices declined in the medium term, as projected in the fall 2004 World Economic Outlook (WEO), the present value of foregone revenue would be slightly lower at US\$2.6 billion or 30 percent of 2004 GDP (Table 1.8, Scenario II).

Table 1.8. Azerbaijan: Scenarios of Energy Price Reform, 2005-08 1/

	No domestic price adjustment		Domestic price reform	
	Unchanged world market prices Scenario I	WEO forecast Scenario II	All prices adjusted in 1 year Scenario III	Gradual adjustment in 3 years Scenario IV
Present value of foregone revenue for 2005-2008 (as a percent of 2004 GDP)				
2005	7.8	7.8	4.4	6.5
2006	8.1	7.5	0.0	4.2
2007	8.4	7.4	0.0	2.0
2008	8.6	7.4	0.0	0.0
Total	32.9	30.1	4.4	12.7
Loss of annual revenue (as a percent of non-oil GDP)				
2005	10.2	10.2	5.7	8.4
2006	9.5	8.8	0.0	4.9
2007	8.9	7.8	0.0	2.2
2008	8.3	7.2	0.0	0.0

Source: Fund staff estimates and projections.

1/ Reflects only the effects of underpricing.

21. **The quicker the adjustment is, the lower the cost in terms of foregone revenue is.** Two additional illustrative scenarios assess the orders of magnitude of the fiscal impact stemming from bringing domestic prices to import reference prices consistent with the WEO assumptions. Scenario III (Table 1.8) assumes that the domestic/import reference price gap will be eliminated in one year. In this case, the present value of foregone revenue is estimated at US\$0.4 billion or 4 percent of 2004 GDP. Given that the import reference prices are projected to decline during 2006-08, domestic prices for energy products will need to decline as well.

22. **Scenario IV (Table 1.8) assumes a longer period of energy price adjustment with a pace differentiation by product.** Increases for those oil products that are used predominantly by the private sector, already paid for mainly in cash (e.g., gasoline), and not affecting the poor directly could be implemented faster. At the same time, increases for those products that are used predominantly by industries that are characterized by serious payments problems (e.g., fuel oil) or that will have a significant impact on vulnerable groups and the agricultural sector (e.g., diesel, kerosene, and natural gas) could be implemented more slowly. Assuming that gasoline prices catch up with import reference prices in one year, while other energy prices increase over three years, the present value of foregone revenue amounts to US\$1.1 billion or 13 percent of 2004 GDP.

23. **The sensitivity analysis (Table 1.9) varied key elasticity parameters.**⁷ As shown, varying these parameters over a broad range of values does not materially affect the conclusion. The averages of estimates over these various scenarios are close to the baseline scenario, and the standard deviation for each scenario is relatively small.

Table 1.9. Azerbaijan: Sensitivity Analysis - Total Cost/Loss of Revenues, 2005-08
(In present value terms as share of 2004 GDP)

		Scenario I	Scenario II	Scenario III	Scenario IV
Baseline scenario 1/		32.9	30.1	4.4	12.7
GDP elasticity	0.6	33.5	30.6	4.4	13.0
	0.7	34.0	31.1	4.5	13.3
	0.8	34.6	31.6	4.6	13.5
	0.9	35.2	32.1	4.6	13.8
Price elasticity	-0.10	32.9	30.1	4.2	12.3
	-0.25	32.9	30.1	3.6	11.3
	-0.50	32.9	30.1	2.7	9.6
	-0.75	32.9	30.1	1.7	8.1
Coefficient of adjustment 2/	0.10	32.9	32.3	4.1	12.6
	0.25	32.9	31.5	4.2	12.6
	0.75	32.9	28.7	4.5	12.7
	1.00	32.9	27.4	4.7	12.7
Average		33.3	30.4	4.0	12.2
Standard deviation		0.8	1.4	0.9	1.6

Source: Fund staff estimates and projections.

1/ The baseline scenario has the following parameters: GDP elasticity = 0.50; Price elasticity = -0.05; Coefficient of adjustment = 0.5.

2/ This reflects the coefficient of adjustment of oil product prices to crude oil prices.

24. **While increasing domestic energy prices to the level of import reference prices will raise substantial additional fiscal revenue and improve allocation efficiency, the government will need to address the issues of the macroeconomic and distributional**

⁷ Scenarios III and IV, as well as the sensitivity analysis, imply efficiency gains from price increases, as volumes are expected to adjust to price changes through assumed demand elasticities.

impact of energy price increases. Sound fiscal management is key to maintaining macroeconomic stability during the price reform process. The government should continue to focus on the non-oil fiscal deficit as a measure of the fiscal stance as required under the Long-Term Oil Revenue Management Strategy approved by the President in 2004, and the annual limits on increases in the non-oil fiscal deficit should account for the chosen pace of energy price adjustment, which *de facto* will have a contractionary effect equivalent to a cut in expenditure. A portion of the targeted increase in explicit expenditure will need to be channeled to financing targeted social assistance, which is planned to be developed by 2006 with World Bank assistance.

Rationale for and Alternative Forms of Price Smoothing

25. **Once the gap between domestic and import reference prices has been eliminated, it is essential to have a mechanism in place ensuring that this gap does not re-emerge.**

There might be two options to consider for such a mechanism. First, a full adjustment of domestic prices to reference prices could be implemented. Second, a smoothing mechanism reducing volatility of energy prices could be put in place.

26. **In developing countries, smoothing volatility of oil prices might be superior to a full adjustment provided certain conditions are in place.** Volatile energy prices negatively affect the budget constraints of consumers and producers. In the presence of risk aversion and substantial sunk costs of adjustment to changes in oil prices, smoothing volatility in oil prices is welfare-enhancing. In developed countries, such smoothing is mainly achieved through oil price hedging, insurance, and credit markets, which help reduce direct exposure of consumers' and producers' budgets to oil price fluctuations. In developing countries, these three possibilities are missing or very limited, creating a rationale for a government-sponsored mechanism of energy price smoothing. While such a mechanism involves domestic product price regulation by the government, domestic energy product prices should be in line with international reference prices on average during a certain period of time. This will ensure that domestic consumers are not subsidized and the government does not systematically forego hydrocarbon revenue (Giulio et al., 2003).

27. **Countries smoothing retail energy product prices can adopt a discretionary or rules-based adjustment mechanism.** A discretionary approach almost inevitably means that price smoothing will be used for political purposes, and may prevent the desirable adjustment to retail prices, both when international prices rise and when they fall. As a result, governments implementing price adjustments in a discretionary manner are more inclined to adjust prices rarely and only when they are forced to do so by circumstances. Furthermore, in case of a discretionary approach, prices, in practice, need to be adjusted by large amounts due to the likely long lag between any consecutive two price adjustments.

28. **Rules-based or automatic price adjustment mechanisms rely on a formula, which determines the level of domestic product prices at regular intervals, taking into account import reference prices.** One of the important advantages of this approach is that it

minimizes political interference in price setting, as it does not require approval of executive authorities or legislative bodies. It also enables the government to distance itself from unpopular price changes and allows for more regular and modest price adjustments, which are easier for the economy to respond to. On these grounds, a rules-based price adjustment mechanism seems superior to a discretionary approach. Most common rules-based mechanisms are *Moving Average Rules*⁸, *Trigger Rules*⁹ or a combination of both.

29. Governments in developing countries, including Azerbaijan, are often concerned about rules-based smoothing because it might be conducive to speculative hoarding.

Individuals and firms with a capacity to hoard may engage in building up stocks before the new—higher—prices are announced. Such hoarding, for the purpose of either speculation or a reduction of adjustment costs, can arguably lead to artificial shortages of the products in the domestic market. The larger the gap between the current domestic and world market prices is, the higher incentives to hoard are. Thus, it is important to reduce periods between adjustments and avoid large trigger limits on price changes.

30. Speculative hoarding by producers, which in developing countries are usually represented by a few large state companies, could also be potentially limited by controlling their propensity to attain extra profits through monitoring their inventory.

Producers should be required to report the balance of inventories on the last day of each month, thus establishing the inventory level on the day the price initially increases. This initial inventory level later should be compared to the inventory level in effect at the time of the next price movement. If the inventory is higher, the producer will be subject to an extra profit tax payment on the incremental portion of inventory based on the differential between the adjusted and previous prices. Conversely, if the inventories are lower, the producer will be entitled to a tax credit. Not only is this procedure expected to reduce incentives to hoard oil products, it is also likely to encourage producers to minimize inventory levels. If used, this procedure should be transparent to prevent rent-seeking.

31. Frequent adjustments in prices will reduce the likelihood of large adjustments and, on average, maintain relatively small gaps between current domestic and import reference prices even in case of large price increases in the world market. Figure 1.1 shows how various automatic price adjustment mechanisms would have worked, had they been applied to the international spot price of crude oil for the last 12 years. As can be seen,

⁸ Under these rules, current retail prices are based on a moving average of past spot prices, starting from the current month and moving backwards. The longer the time horizon of the moving average is, the more price smoothing this rule achieves.

⁹ Under these rules, a price band is initially determined (e.g., plus or minus 10 percent of the current spot prices), and retail prices are updated to reflect the current spot price only when spot prices reach a level which is outside the band. When prices are changed, the price band shifts up or down, taking the current spot price as the new central point of the band. This pricing rule reduces fluctuations in domestic retail prices, but passes on relatively large changes in international prices.

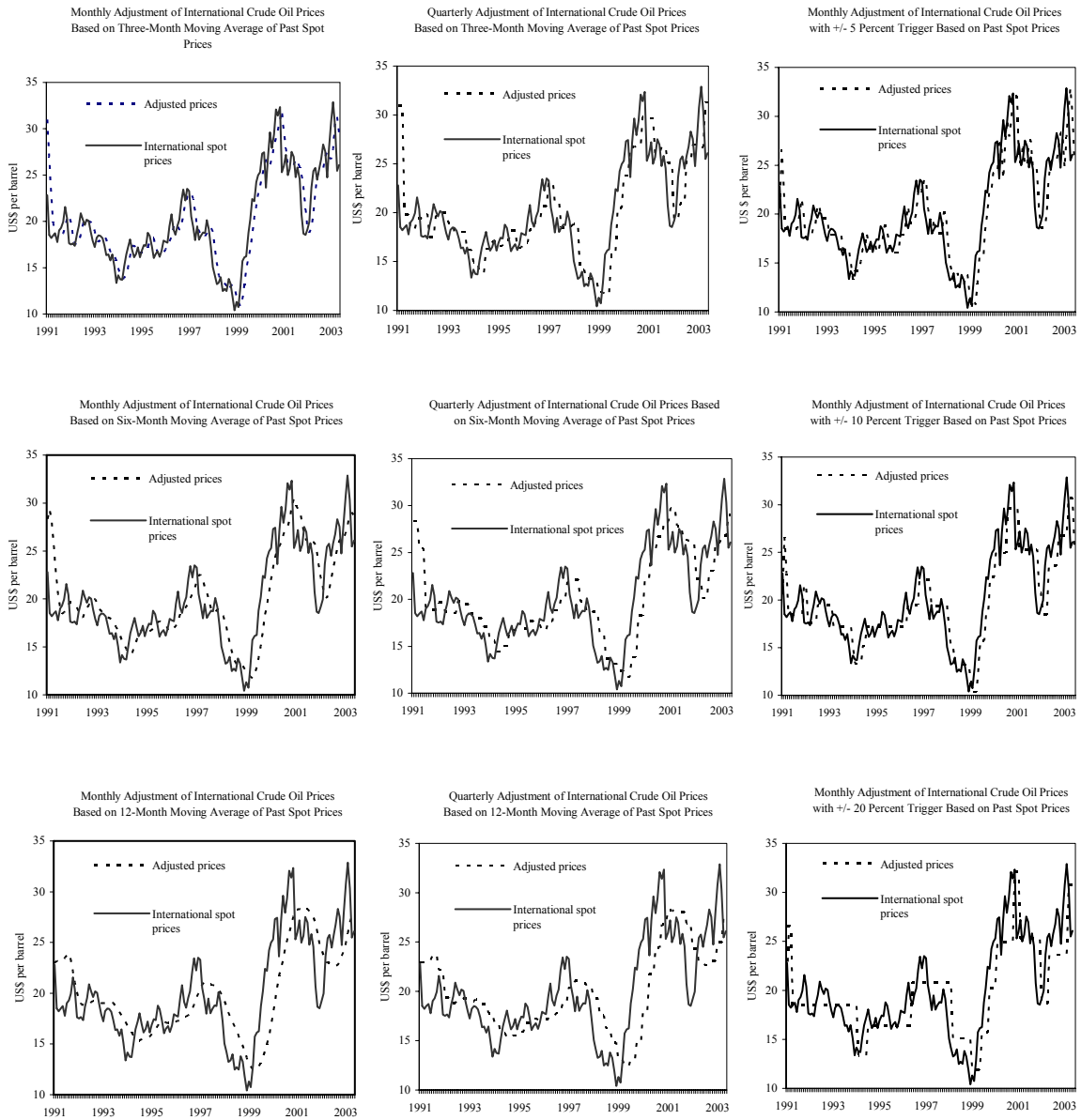
less frequent adjustments and shorter periods of averaging past prices under *Moving Average Rules* would lead to greater average deviations of domestic prices from reference prices (Figure 1.1). As for the adjustments with the use of *Trigger Rules*, higher triggers result in less frequent adjustments and larger deviations from reference prices (Figure 1.1).

32. **Price smoothing should affect all domestic energy product prices.** Governments often adjust only prices of some domestic energy products and leave others, such as, for example, fuel for cooking or heating, still below import reference prices due to their wide usage by households. This is likely to lead to a substitution of the expensive energy resource by the subsidized one, and, consequently, an inefficient consumption mix.¹⁰ Also, this mechanism will not be effective to protect the poor because it is not targeted.

33. **The choice of a mechanism for energy price adjustment should reflect current economic and political factors in Azerbaijan.** A price smoothing mechanism might have some advantages in Azerbaijan compared to a full pass-through because of underdeveloped financial markets, a low degree of monetization of the economy, and limited access to credit. These deficiencies will make it difficult for consumers and producers to shield their budgets from large fluctuations of oil prices if they are fully passed on to domestic prices. If a price smoothing option is chosen, adoption of a transparent rules-based mechanism for all energy products, which does not involve a need for approval from executive bodies and is fully enforced, would ensure the transparency of the process and reduce the likelihood of price gap re-emergence for prolonged periods. In particular, a smoothing mechanism with quarterly adjustments based on semi-annual moving averages or trigger bands of 2 to 5 percent are likely to strike the right balance between the need to smooth price fluctuations and minimize the risk of prolonged gaps with import reference prices. Figure 1.2 illustrates how such mechanisms could work, should the government decide to implement one of them beginning in 2006, consistent with Scenario III.

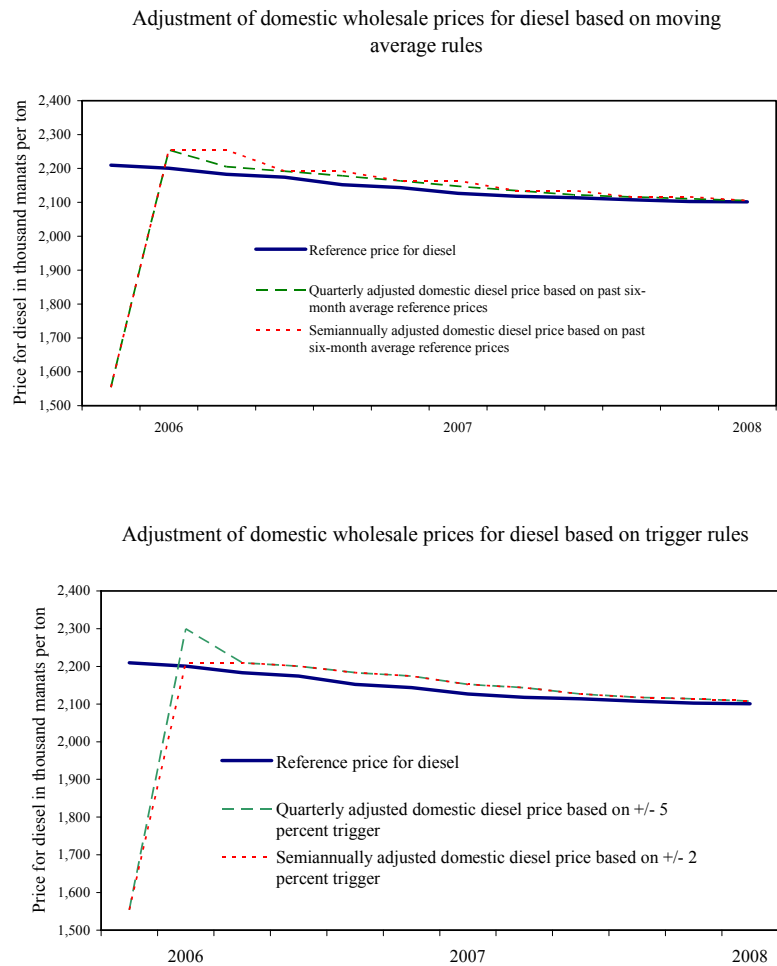
¹⁰ As noted in IMF (1991), although in the short run, the elasticity of substitution between fuels are low, over the medium and long terms, such pricing policies are likely to have a considerable negative impact on the structure of fuel use throughout the economy.

Figure 1.1. International Spot Crude Oil Prices: Various Automatic Adjustment Mechanisms, 1991-2003



Source: Fund staff estimates.

Figure 1.2. Azerbaijan: Automatic Price Adjustment Mechanisms, 2006-08



Source: Fund staff estimates and projections.

D. Conclusion

34. Although the November 2004 increases in oil product and natural gas prices have reduced the extent of underpricing of energy products in Azerbaijan, substantial gaps between world market reference and domestic prices remain in selected product categories, especially fuel oil, jet fuel, diesel, kerosene, and natural gas. The continuation of energy product underpricing will result in substantial fiscal costs and the aggravation of problems related to excessive use of energy products in production and consumption.

35. The government's adherence to its commitment to review energy prices at least once a year in the context of the annual budget preparation process will be crucial at the first stage of energy price reform. The government still needs to make a decision on how quickly to

eliminate the existing gap between the world market reference and domestic energy product prices. The paper recommends increasing domestic energy prices to import reference price levels in 1-3 years, to have sufficient time to resolve outstanding structural issues, including the need to establish targeted social assistance and restructure enterprises which could be adversely affected by higher energy prices. Once domestic and import reference prices are at parity, at least quarterly adjustments of domestic energy products prices could be considered, using a number of smoothing options.

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II. POLICIES TO PROMOTE REGIONAL ECONOMIC CONVERGENCE IN AZERBAIJAN¹¹

A. Introduction

36. Azerbaijan's macroeconomic performance has been strong since 1996, with high real GDP growth and low inflation. Initially, the economic recovery benefited mostly the areas in and around Baku, leading to growing regional income inequalities. While more recently economic growth has started to spill over to other regions of Azerbaijan, income levels in the Baku region remain significantly above the national average. Together with a better provision of key public services in Baku—including health, education, and infrastructure services—this income differential has been responsible for continuing migration from other regions. Concerned that large gaps in income and livings standards can act as a barrier to the social cohesion necessary for successful economic modernization, the Azerbaijan authorities have adopted a regional economic development program for the period 2004-08, aimed at promoting balanced regional economic development.

37. This paper summarizes the international experience with regional policies and analyzes the Azerbaijan government program of regional development in light of this experience. The remainder of this paper is organized as follows. Section B provides indicators on Azerbaijan's regional distribution of incomes and poverty. Section C presents the main elements of the authorities' regional development program. Section D summarizes the theoretical and empirical economic literature on regional development policies. Finally, Section E draws lessons for Azerbaijan from the international experience.

B. Regional Income and Poverty Indicators in Azerbaijan

38. Azerbaijan has a total resident population of about 8.3 million. Administratively, the territory of the country is divided into 59 districts, which are grouped into 9 regions: Nakhchivan (southwest),¹² Absheron-Guba (northeast), Mugan-Salyan (central), Ganja-Gazakh (west), Sheki-Zagatala (northwest), Lankaran-Astara (southeast), Shirvan (central), Karabagh-Mil (southwest), and Baku city (east). Following the armed conflict with Armenia during 1988-94, about 1 million people (12 percent of total population) became refugees and internally displaced persons.

39. There is significant income disparity among regions, with Baku having the highest per capita income—despite continued, significant migration from other regions. The income level in Baku is 30 percent higher than in Nakhchivan that has the lowest income (Table 2.1). The eastern regions including Baku are, in general, better off than the rest of the country,

¹¹ Prepared by Niko Hobdari.

¹² Following the war with Armenia, the Nakhchivan Autonomous Republic, with a population of about 0.3 million people, is separated from the main territory of Azerbaijan by Armenia.

Table 2.1. Azerbaijan: Per Capita Monthly Income by Geographical Zones, 2003
(In thousands of Manat)

	Nakhchivan	Absheron-Guba	Mugan-Salyan	Ganja-Gazakh	Sheki-Zagatala	Lanakaran	Shirvan	Karabagh-Mil	Baku	
Total income	167	194	177	172	176	175	179	181	216	
Employment	51	62	39	35	32	39	33	46	103	
Self-employment	40	53	47	38	36	31	59	30	45	
Income from agriculture	30	19	34	37	57	45	46	38	4	
Rent	2	4	1	3	2	2	1	1	5	
Income from property	1	1	0	1	0	1	0	0	1	
Current transfers	21	21	25	20	23	20	19	28	20	
Pensions	18	18	15	17	21	17	15	18	17	
Benefits and social contributions	2	3	8	3	2	2	3	6	2	
Social transfers in kind	0	1	2	1	0	0	0	5	1	
Other income	22	34	30	39	25	38	22	36	38	
o/w: Income from other households	19	28	26	31	21	29	18	26	29	
				(in percent)						
Memorandum items:										
Regional income relative to Baku	77	90	82	80	81	81	83	84	100	
Share of income from employment	31	32	22	21	18	22	18	26	48	
Share of income from agriculture	18	10	19	21	33	26	25	21	2	

Source: 2003 Household Budget Survey.

benefiting from the massive foreign direct investment (FDI) for oil in recent years and associated spillover effects. The western regions, on the other hand, where a significant part of the old industrial structure is located (Ganja-Gazakh), tend to be the “poorest” in terms of income, and also have higher unemployment rates relative to the rest of the country. This is mainly due to existing barriers to the integration of products, capital, and labor markets, such as an underdeveloped transportation network, unreliable provision of utility services, insufficient presence of financial institutions, and illiquid housing markets.

40. Baku, in addition to having the highest average income relative to the rest of Azerbaijan, also has the lowest incidence of poverty (40 percent compared to a national average of 46.7 percent). However, the share of people living in extreme poverty in Baku is higher than the national average (9.1 percent compared to a national average of 8.8 percent, Table 2.2), reflecting difficulties to absorb the rapid migration from other regions.

Table 2.2. Azerbaijan: Poverty Incidence by Regions

Category	Poverty levels	
	Poverty line (175,000 Manat)	Extreme poverty line (125,134 Manat)
Total population	46.7	8.8
Of which: Urban	47.8	9.6
Nakhchivan	62.9	13.1
Absheron-Guba	47.1	13.0
Mugan-Salyan	45.9	6.7
Ganja-Gazakh	49.6	5.6
Sheki-Zagatala	46.3	5.7
Lanakaran-Astara	48.1	7.8
Shirvan	55.4	7.2
Karabagh-Mil	43.5	11.8
Baku	40.0	9.1

Source: 2003 Household Budget Survey.

41. Local governments in Azerbaijan have limited fiscal autonomy. Tax revenue accruing directly to local governments (excluding Baku) accounts for only about 15 percent of their spending, with the remainder covered by transfers from the State Budget.¹³ There are no established rules or formulas on how to distribute such transfers, and thus decisions on allocating them to individual regions are largely made on an ad hoc basis.

C. Summary of the Regional Economic Development Program

42. The program of regional development lays out regional policies, as well nationwide measures aimed at promoting the mobility of factors of production and improving institutions. Regional policies include increasing public investments in regions outside Baku for improvements in health, education, and infrastructure (such as roads—particularly in rural areas and small districts—power stations, and water supply and irrigation facilities), enhancing the regions’ fiscal autonomy, creating local employment information and labor training centers, establishing rural credit unions, using government lending to the private sector in poor regions via commercial banks, and establishing special economic zones (SEZs). The nationwide measures aim at promoting competition, improving the business

¹³ Local (municipal) taxes include (i) taxes on land and other property of physical persons; (ii) taxes on the use of construction materials of local importance; and (iii) taxes on profits of enterprises and institutions that are in the ownership of municipalities.

environment, and deepening financial intermediation, with a view to helping reduce existing bottlenecks to interregional labor and capital mobility.

43. A Secretariat has been formed in the Ministry of Economic Development to oversee the implementation of the regional development program. The 2005 budget will finance a number of initiatives envisaged in the program, and some steps have already been taken to ensure its consistency with other government initiatives, particularly the State Program for Poverty Reduction and Economic Development. However, interagency coordination remains weak.

D. Economic Theory and Experience with Regional Development Policies

Review of Economic Theory on Convergence and Divergence

44. The theoretical literature on economic growth can be grouped under two competing hypotheses. The first one, the *convergence* hypothesis, argues that technological improvements lead to economic convergence among regions and countries, provided there is free trade and relatively unrestrained competition. The second one, the *divergence* hypothesis, asserts that market forces, in the presence of free trade and factor mobility, lead almost unavoidably to income inequality and divergence in economic growth rates among regions and countries.

45. The key assumption of convergence theories is that all factors of production (e.g., labor, as well as human and physical capital) have decreasing returns to scale.¹⁴ According to these theories, free trade and open competition encourage movement of mobile factors toward regions where they have a higher marginal product, that is, capital to the poorer regions, and labor to the richer regions. This, in turn, leads to a higher per capita growth rate in poorer regions, and thus convergence in per capita incomes until an approximately uniform distribution of these mobile factors is reached across regions. These models therefore recommend a reduction in barriers to trade and factor mobility as a way to promote regional convergence.

46. Conversely, the key assumption of divergence theories is the presence of increasing returns to scale in at least some sectors of the economy.¹⁵ According to these theories, increasing returns, in the presence of high fixed costs, are the engines of economic progress, while comparative advantages and competition play a secondary role. These theories suggest that, due to the presence of increasing returns, any increase in the degree of trade openness and factor mobility is likely to send the most productive factors flowing toward the advanced

¹⁴ The basic model is that of Solow (1956) and Swan (1956).

¹⁵ See Krugman (1991), and Krugman and Venables (1995).

regions, where their return is higher, leaving the disadvantaged areas further behind. Thus, a “core-periphery” structure may emerge with trade integration.

47. An extreme version of divergence theories predicts that the construction of infrastructure for transportation and communication may be harmful to the poorest areas, as it facilitates migration of their most productive factors (Martin, 1997). A weaker version of divergence theories generates divergence because the poor regions have not managed to cross a threshold level in their endowment of strategic inputs, such as the following: human capital, public infrastructures, research and development activity, and financial deepening. According to these theories, regions will cluster within different clubs, which are determined by upper and lower bounds in the endowments of the strategic factors. While there could be convergence among regions of the same cluster, the income disparity between regions in different clusters might actually continue to increase.

48. The impact of open trade, factor mobility, and public investment policies has varying effects under these two competing groups of growth theory models. Liberalizing trade and factor mobility (across both regions and countries) will lead to convergence in per capita income under convergence theories, but will have the opposite or mixed effects under divergence theories.

49. The impact of income-equalizing grants on convergence also differs under the two competing extreme versions of these theories. If the objective is convergence in incomes, such grants are discouraged under extreme convergence theories, as they undermine economic growth in poorer regions, but they are encouraged under extreme divergence theories in order to reduce incentives for the most productive factors to move from poorer to richer regions. However, under the weaker versions of convergence and divergence theories there seems to be more or less agreement regarding the desirability of income-equalizing grants, largely on equity grounds. Since not all factors of production are equally mobile, even if there is free mobility, many people will stay in the poorer regions due to, for example, age or ethnicity considerations. Hence, income-equalizing grants may be called for on welfare grounds because transfers to the poor regions will have a direct positive welfare impact through income transfer effects. If such grants finance spending that lowers transactions costs between regions, they can also induce firms in labor intensive industries to relocate to poor regions.

Convergence or Divergence? A Review of International Experience

50. While a few developing countries appear to have been able to reduce regional income inequalities (e.g., India and Pakistan), regional inequality has actually increased in many other developing countries. The latter has particularly been the case in countries experiencing fast overall real GDP growth (e.g., China, Indonesia, and Thailand), but also in other

developing countries as well (e.g., Brazil, Philippines, Sri Lanka, and Vietnam).¹⁶ In many cases, the divergence in regional incomes has occurred despite targeted regional policies, including infrastructure and other public investments in the “poorer” regions.

51. In contrast, developed countries generally experienced convergence in per capita incomes. There was a large reduction, for example, in inequality of regional per capita incomes in the United States in the past century (1880-1990).¹⁷ In addition, several studies have found convergence in per capita incomes among European Union (EU) countries,¹⁸ as well as across regions in most individual EU countries since the end of World War II, particularly among regions of Spain and Portugal.¹⁹ However, there have been cases in the EU where regional income inequalities seem to have increased (e.g., Greece).²⁰

52. It seems that the theories based on decreasing returns to scale provide an adequate description of the main forces underlying the convergence process in developed countries. Evidence from U.S. cities reported by Ciccone, Peri, and Almond (1999), for example, overwhelmingly supports the idea that, if externalities are at all present, they are too weak to overcome the usual effects of decreasing returns. While the tendency for divergence in developing countries seemingly supports theories based on increasing returns to scale, it may well be that the observed divergence reflects the fact that factors of production are either unable or unwilling to move, due to impediments and/or age and ethnicity considerations (Shankar and Shah, 2001).

53. The speed of convergence, in countries and regions where it has taken place, has been relatively slow. In India, for example, the estimated speed of regional income convergence between 1961 and 1991 amounted to about 1.5 percent per year of per capita income (World Bank, 1996). The speed of convergence among EU countries since World War II has been similar, about 2 percent of per capita income a year (Barro and Sala-i-Martin, 1991), as poorer countries have grown faster than wealthier ones, and the dispersion of per capita incomes has fallen (Pritchett, 1996). The speed of convergence has been highest in the United States (Barro and Sala-i-Martin, 1991) and Japan, although not much higher than elsewhere—about 2.5 percent and 3 percent per year, respectively.

¹⁶ Shankar and Shah (2001).

¹⁷ Caselli and Coleman (1999).

¹⁸ Barro and Sala-i-Martin (1991).

¹⁹ De la Fuente (2001).

²⁰ Martin (1997).

Policies that have helped promote regional convergence

54. The experience of countries, where convergence occurred, demonstrates that free factor mobility, integrated domestic markets, and strong regional institutions contribute to convergence in regional incomes. However, evidence on the positive impact on income convergence of financial transfers to the regions, decentralization, and special economic zones is mixed.

Enhancing factor mobility

55. The convergence in regional incomes in developed countries has generally been associated with policies of open trade across regions and removal of barriers to factor mobility. The United States provides one of the best examples of convergence in regional incomes, primarily because of enhanced mobility of labor and capital. The high mobility of the factors of production, together with an improved business environment in the poorer Southern regions, led gradually to the displacement of low-wage labor and its migration North, while increased mobility of capital led to its move toward the South. Both factors have contributed to convergence.

56. Regional economic developments in the EU also highlight the positive impact of high labor and capital mobility in achieving regional economic convergence. Boldrin and Canova (2000), for example, show that the regional convergence rate in Europe was the highest in the period between the initial post-war period until about mid-1970s, which was characterized by high mobility of both labor and capital. During this period, regional policies were largely absent in the EU area. The authors note that the EU's convergence rate has slowed down since then, despite gradually increasing Structural and Cohesion Funds allocated by the European Commission to poor regions, as the mobility of labor was reduced considerably due to increasingly restrictive labor policies. These policies included restrictions on hiring and firing of workers, as well as the adoption of binding national minimum wage levels. In the absence of substantial labor mobility across regions, and given the rigid wage structures that have increasingly characterized national labor markets in Europe since the mid-1970s, long-term unemployment in the poorer regions has increased.

Enhancing decentralization

57. International experience suggests that fiscal decentralization offers no panacea. Evidence indicates that successful development strategies are compatible with various balances of power between the center and the regions, which are often related to the size of the country, its history, as well as ethnic and political factors. While fiscal decentralization is positively correlated with per capita income growth across countries (Oates, 1999), the direction of causality is not clear.

58. Decentralization can strengthen the delivery of local public services with consequent efficiency gains by providing greater local accountability for results and interjurisdictional competition, and allowing local governments to take into account the specific local

conditions and preferences. However, experience indicates that in terms of progress in convergence some decentralized states (e.g., Brazil) have done worse than centralized ones (e.g., South Korea), and some centralized states (e.g., Thailand) have had a worse record than decentralized ones (e.g., United States). Implementation capacity at the level of regional governments and the strength of regional institutions appear to be essential preconditions for successful decentralization.

Increasing capital and current transfers

Investing in infrastructure

59. Improving infrastructure seems to have been critical to help achieve convergence in per capita incomes in most developed countries and some developing countries. Studies by Barro and Sala-i-Martin (1991 and 1992), for example, suggest that if there had been no differences in infrastructure endowments in the EU, the speed of convergence in per capita incomes among EU countries would have been faster. In addition, studies on the economic performance of Chinese (Fleisher and Chen, 1997; Mody and Wang, 1997; and Demurger, 2000) and Spanish provinces (De la Fuente, 2001) also suggest that differences in transport infrastructure and telecommunication facilities account for a significant part of the observed variation in growth performance of provinces. Furthermore, evidence from the EU area indicates that there is crowding-in effects from public investments.²¹

60. However, the benefits from investments to poorer regions for regional income convergence have proven elusive in many countries. In Brazil, for example, regional development policy in the 1970s was marked by massive state-led investments in protected capital-goods industries, subsidies, and incentives for the private sector and infrastructure development in the poorer regions (north and northeast). However, these efforts were largely unsuccessful in reducing the income and social gaps—primarily because many of these projects were ill-conceived and did not benefit the local, agriculture-based economy (World Bank, 1996). In fact, it seems that such infrastructure investments, which aimed at integrating the national economy and lowering business costs in peripheral regions, had perverse effects—companies in and around the richer Sao Paulo achieved greater economies of scale by reaching distant markets, contributing to increased divergence in regional per capita incomes.

61. Similarly, in Italy, the large-scale investments in basic infrastructure over the last 40 years targeting the “poorer” South (Mezzogiorno) have had little wider regional impacts. The literature suggests that the root problems of regional development of the Mezzogiorno may have more to do with overall institutional weaknesses in this region—for example, rent-seeking behavior (itself engendered in part by the fiscal subsidies and transfer programs),

²¹ As noted in De la Fuente (2002), some studies have found that a one euro increase in public investments increases private investments by as much as twenty cents.

inability of the state to adequately protect and enforce private property rights, the same minimum wage as the rest of the country, and relatively underdeveloped financial institutions in poorer regions (World Bank, 1996).

62. These experiences suggest that public investments in infrastructure are effective only in the presence of efficient institutions and when driven by private sector demand (World Bank, 1996), bolstering convergence effects of competitive domestic markets. These experiences also indicate that investing in small but essential infrastructure works, such as rural and urban water supply, or a simple network of roads, is more effective in promoting income convergence than large-scale projects.

Investing in health and education

63. While investing in infrastructure is beneficial under appropriate conditions, investing in health and education is key to supporting balanced regional development. As noted in Demurger, Sachs, and others (2002), once market economy institutions are in place, technological advancement is the fundamental engine of sustainable development. The objective is to create sufficient local scientific capacity to accelerate the diffusion of new technologies from the richer to poorer regions, a process that requires a qualified labor force.

Using income-equalizing transfers to regions

64. Fiscal income-equalizing transfers from the center to poor regions have undoubtedly helped to maintain a higher standard of living and per capita incomes in poorer regions. However, such transfers have not contributed to real dynamism in the poor regions (in the sense of having led to self-sustained growth). Indeed, depressed regions have often tended to become more reliant on such central assistance over time. In some cases, such reliance may have spawned other distortions (i.e., rent-seeking in Southern Italy), and the richer regions usually have become more intolerant of such resource transfers.

Establishing special economic zones

65. International experience indicates that the costs associated with special economic zones (SEZs) are often too high (IMF, FAD Guidance Note, 2003). The main costs of SEZs to the government arise from tax breaks. Firms established in free zones often obtain concessions from host countries—including tax holidays, reduced income tax rates, exemptions from domestic indirect taxes, and the like. There is ample evidence that such privileges are not among the main determinants of the decision of foreign firms to invest; for these firms, it is more important to be subject to a stable and fair tax regime. A study by McKinsey Global Institute (2003), for example, finds that official targeted incentives rarely have a positive effect, and have often resulted in inefficiency and waste of resources. In fact, successful free trade zones, such as Santa Cruz in India, grant very limited privileges. Enforcement costs, to prevent producers/consumers outside the zone from taking advantage of the zone's privileges, are the second source of direct costs and tend to increase over time. The most serious costs associated with free zones come from tax leakages from less-than-

fully secured zones—when the enforcement efforts are inadequate. No enclave is fully hermetic, and significant tax revenue can be lost through abuse. Over time, pressure increases for privileges to be extended to other regions as well, and more companies take advantage of the tax concessions (e.g., for local investors, by teaming up with foreign partners; for existing foreign investors, by dismantling and rebuilding their corporate structures), thus increasing the costs.

E. Lessons for Azerbaijan

66. Many elements of the regional economic development program adopted recently by the Azerbaijan authorities are consistent with international best practices. However, the key to achieving dynamic and sustainable economic growth in the regions will be the effective implementation of the measures incorporated in the regional economic development program. In particular, for a successful implementation of the strategy the authorities will need to do the following:

- First and foremost, create a level-playing field across Azerbaijan by removing barriers to labor and capital mobility, developing the financial sector, reducing red tape, and tackling governance weaknesses;
- Improve planning and institutional implementation capacity of the central government to ensure that resources earmarked for poor regions are used effectively, including by approving rolling medium-term investment strategies for regional development in the context of the annual budget preparation process and medium-term expenditure framework;
- Direct public spending and investment in poorer regions toward health, education, and demand-driven basic infrastructure, such as a simple network of regional roads, urban and rural power, gas and water supply, and irrigation facilities;
- Increase regional fiscal autonomy gradually, in recognition of limited institutional capacity in the regions;
- As international experience indicates, the convergence in regional incomes is likely to be slow. Thus, in the medium term, the rapid labor migration toward Baku is likely to continue because of the persistence in regional income disparities. To address this challenge, the government needs to consider improving infrastructure in Baku. This will help avoid the costs associated with congestion, such as slums, overburdened sewage systems, and an increasing incidence of poverty.

- Carefully consider the SEZ policy, given that any benefits from SEZs are likely to be short-lived, and clearly offset by associated costs, which tend to increase over time. Should such zones be established, the authorities will need to consider (i) limiting the number of zones (one or two maximum) (ii) physically enclosing the zones; (iii) limiting tax privileges to trade taxes; (iv) maintaining a stable and fair tax regime with no special privileges; and (v) allowing the private sector be responsible for investment and administration in the zones.

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