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INTERNATIONAL MONETARY FUND

REPUBLIC OF POLAND

Statistical Appendix

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Approved by European I Department

May 23, 2002

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Table 1. Poland: Composition of Aggregate Demand, 1997–2000

	1997	1998	1999	2000
		(In percent of GDP)		
Domestic demand	103.7	105.2	106.4	106.9
Consumption	79.7	79.0	80.0	80.8
Private	63.7	63.6	64.4	65.3
Government	16.0	15.4	15.6	15.5
Gross capital formation	24.6	26.2	26.4	26.1
By type:				
Fixed investment	23.5	25.2	25.5	24.9
Net exports	-4.3	-5.2	-6.4	-6.9
Exports	25.5	28.2	26.1	29.4
Imports	29.8	33.4	32.5	36.6
		(Percent change in real terms)		
Domestic demand	9.2	6.4	4.8	2.8
Consumption	6.1	4.2	4.4	2.5
Private	6.9	4.8	5.2	2.7
Government	3.1	1.4	1.0	1.1
Gross capital formation	20.8	13.8	6.1	3.9
By type:				
Fixed investment	21.7	14.2	6.8	2.7
Change in stocks 1/	0.1	0.1	-0.1	0.3
External demand				
Net exports of goods and nonfactor services 1/	-2.6	-1.9	-1.0	1.0
Exports of goods and nonfactor services	12.2	14.3	-2.6	23.2
Imports of goods and nonfactor services	21.4	18.5	1.0	15.6
Gross domestic product	6.8	4.8	4.1	4.0
		(In billions of zlotys)		
Gross domestic product	472.4	553.6	615.1	685.0

Source: Central Statistical Office.
1/ Contribution to GDP growth.

Table 2. Poland: Sectoral Breakdown of Investment, 1997–2000 1/

	1997	1998	1999	2000	1997	1998	1999	2000
	(In percent of total)				(Annual percentage change)			
Agriculture, hunting and forestry	2.9	2.0	1.9	1.9	-3.5	-16.9	2.2	-3.6
Fishing	0.0	0.0	0.0	0.0	-20.9	26.0	32.9	-8.6
Mining and quarrying	2.3	2.0	1.9	1.5	0.2	3.1	-2.1	-18.1
Manufacturing	25.5	25.8	22.3	19.9	19.8	17.9	-7.4	-9.2
Electricity, gas, and water supply	11.1	9.1	8.4	6.9	3.9	-4.1	2.7	-17.9
Construction	6.1	6.9	6.8	7.6	26.9	25.6	3.7	7.4
Trade and repair	8.8	9.5	11.5	10.7	41.3	23.2	28.0	-6
Hotels and restaurants	0.7	0.8	0.9	1.1	20.7	36.2	14.7	31.9
Transport, storage, and communication	12.6	11.7	12.0	12.8	27.0	8.1	8.2	12
Financial intermediation	6.0	7.3	8.0	6.6	59.5	44.1	18.9	-16.6
Real estate and business activities	11.5	13.1	15.2	19.7	24.1	26.2	21.1	29.6
Public administration and defense compulsory social security	1.6	1.6	1.7	2.2	30.9	12.2	8.4	34.2
Education	2.7	2.6	2.3	2.7	23.6	6.0	-7.8	16.1
Health and social work	2.7	2.5	1.8	2.1	14.8	3.4	-22.7	15
Other community, social and personal service activities	5.5	5.1	4.9	4.3	24.2	5.5	-22.7	-12.9
Total	100.0	100.0	99.6	100.0	22.2	15.3	5.9	1.4

Source: Data provided by the Polish authorities.
1/ According to the Polish version of the NACE-EKD classification system.

Table 3. Poland: Investment by Type and Decision-Making Entity, 1997–2000

	1997	1998	1999	2000
	(In billions of zlotys at current prices)			
By type:				
Building and structures	43.4	55.5	63.5	68.2
Machinery and equipment	42.9	0.0	58.5	61.7
Domestic	29.9	35.5	42.4	45.3
Imported	13.0	18.1	16.3	16.4
Other outlays	4.1	57.3	3.9	3.3
Total	90.4	112.8	126.0	133.2
By decision-making entity:				
Public sector	42.1	47.6	47.7	46.3
State property	29.2	29.3	23.4	23.1
Municipal property	11.0	12.4	14.3	15.4
Other	2.0	5.9	10.0	7.8
Private sector	48.3	65.2	78.2	86.8
Of which:				
Private domestic property	28.4	35.6	44.0	47.7
Of which:				
Cooperative	4.5	5.1	5.9	6.9
Total	90.4	112.8	126.0	133.2
	(As a share of total investment, in percent)			
Buildings and structures	48.0	49.2	50.4	51.2
Machinery and equipment	47.4	47.5	46.5	46.3
Private sector	53.4	57.8	62.1	65.2
Of which:				
Cooperative	5.0	4.5	4.7	5.2
Public sector	46.6	42.2	37.9	34.8

Source: Data provided by the Polish authorities.

Table 4. Poland: Value Added by Sector, 1997–2000

	1997	1998	1999	2000
	(In percent of total value added)			
Agriculture, forestry, and fishing	5.5	4.7	3.9	3.7
Industry and construction	37.2	36.3	35.9	35.0
Industry	29.3	27.6	27.1	26.7
Mining and quarrying	3.5	2.9	2.6	2.8
Manufacturing	22.4	21.5	21.1	20.6
Electricity, gas, and water supply	3.4	3.2	3.4	3.3
Construction	7.9	8.7	8.8	8.3
Services	57.3	59.0	60.2	61.3
Trade and repair	20.9	20.7	20.6	20.9
Hotels and restaurants	1.1	1.1	1.3	1.3
Transport, storage, and communications	6.5	6.4	6.8	6.8
Financial intermediation	1.4	1.6	2.2	2.3
Real estate and insurance	9.7	11.7	11.8	12.5
Public administration and defense	5.4	5.3	5.0	5.3
Education	4.3	4.2	4.4	4.6
Health and social security	4.2	4.0	4.0	3.5
Miscellaneous services	3.8	4.0	4.1	4.1
Total	100.0	100.0	100.0	100.0
	(Volume, percentage change)			
Agriculture, forestry and fishing	1.0	5.7	-0.1	-8.1
Industry	10.3	4.3	3.0	6.5
Mining and quarrying	-4.3	-11.6	-1.6	4.6
Manufacturing	14.4	7.6	4.2	7.1
Electricity, gas, and water supply	0.6	-1.0	-1.5	3.7
Construction	13.6	9.1	3.5	-0.7
Trade and repair	8.1	5.0	7.1	3.9
Hotels and restaurants	7.2	12.7	17.0	6.1
Transport, storage, and communications	5.6	6.3	10.5	3.2
Financial intermediation	2.9	9.2	36.3	13.3
Real estate and insurance	-0.7	3.4	-2.6	4.6
Public administration and defense	5.9	1.6	6.2	6.1
Education	0.9	4.9	3.3	1.3
Health and social security	0.8	0.5	-13.8	-1.6
Miscellaneous services	2.8	6.2	5.0	3.7

Sources: Polish authorities; and Central Statistical Office.

Table 5. Poland: The Growth of Production, 1997–2001
(Annual percent change in constant prices)

	1997	1998	1999	2000	2001 1/
Industrial production	11.5	3.5	3.6	7.2	0.0
Mining and quarrying	0.5	-12.8	-2.6	-4.7	-5.1
Manufacturing	13.4	5.3	3.6	7.3	-0.5
Food products and beverages	9.6	3.9	0.6	0.6	3.4
Coke, refined petroleum, etc.	1.7	-11.6	5.1	24.4	2.8
Chemicals and chemical products	11.9	-4.6	-2.2	7.2	2.4
Basic metals	13.2	-7.2	-6.6	10.5	-15.9
Machinery and equipment	8.7	0.5	-5.0	4.5	-1.0
Electricity, gas, and water supply	3.4	-0.4	4.4	4.8	6.5
Construction and assembly production	17.1	11.0	9.4	1.4	-9.9
Agriculture	-0.2	5.9	-5.2	-5.6	...

Sources: Central Statistical Office; and Fund staff estimates.
1/ 2001- preliminary data for units in which the number of employees exceeds nine persons.

Table 6. Poland: Production and Yields of Selected Crops, 1997–2001

	1997	1998	1999	2000	2001
	(In thousands of tons)				
Plant production					
Cereals	25,399	27,159	25,750	22,341	26,960
Of which:					
Wheat	8,193	9,537	9,051	8,503	9,283
Rye	5,299	5,663	5,181	4,003	4,864
Barley	3,866	3,612	3,401	2,783	3,330
Oats	1,630	1,460	1,447	1,070	1,305
Potatoes	20,776	25,949	19,927	24,232	19,379
Sugar beets	15,886	15,171	12,564	13,134	11,364
Oil plants	611	1,211	1,157	971	1,082
Fodder-root crops	4,763	4,743	5,423	5,057	4,431
Meadow hay	13,450	13,307	11,245	9,772	11,415
Straw 1/	21,428	24,086	23,261	18,387	21,794
Vegetables	5,283	6,287	5,626	5,889	5,575
Tree fruits 2/	2,471	2,091	1,958	1,837	2,890
	(Yield per hectare in quintals)				
Yields					
Cereals	28.5	30.7	29.6	25.3	30.6
Of which:					
Wheat	32.1	36.2	35.0	32.3	35.3
Rye	23.1	24.7	23.1	18.8	24.3
Barley	31.1	31.7	30.7	25.4	31.3
Oats	26.1	26.0	25.3	28.5	24.6
Potatoes	159.0	200.0	157.0	194.0	162.0
Sugar beets	379.0	379.0	338.0	394.0	358.0
Oil plants	18.3	23.0	20.2	21.5	23.4
Fodder-root crops	409.0	423.0	385.0	400.0	390.0
Meadow hay	51.8	53.1	45.6	39.0	45.8
Straw 1/	29.2	33.2	32.5	25.8	30.8

Source: Data provided by the Central Statistical Office.

1/ From four cereals plus triticale.
2/ Total fruit production.

Table 7. Poland: The Growth and Structure of Agricultural Production, 1997–2000 1/

	(1990 = 100) 2/			
	1997	1998	1999	2000
	(Volume of production)			
Gross agricultural production	92.5	98.0	92.9	87.7
Final production 3/	99.4	104.6	100.4	97.2
Of which:				
Marketed output	94.1	99.1	100.1	96.1
Net final production 4/	...	...	...	...
	(In percent of total at current prices)			
Share of nonsocialized agriculture 5/				
Gross agricultural production	88.7	89.6	89.8	90.1
Final production	87.9	88.3	88.6	88.6
Of which:				
Marketed output	85.7	86.4	85.9	86.4
Net final production	91.1	91.2	91.8	92.5
Value added	93.7	94.1	94.6	94.0
Share of state procurement in:				
Gross agricultural production	34.3	34.9	37.0	40.0
Final production	50.0	51.1	53.7	57.8
Marketed output	60.1	61.6	61.8	66.8

Sources: Central Statistical Office, Rocznik statystyczny (various issues); and Polish authorities.

1/ Excludes agricultural services.
2/ According to the Polish version of NACE-EKD.
3/ Gross agricultural production minus intermediate consumption.
4/ Final agricultural production minus value of products of agricultural origin bought by agricultural producers.
5/ Data for individual farms.

Table 8. Poland: Total Employment by Sector, 1997–2000
(Annual averages)

	1997	1998	1999	2000	1997	1998	1999	2000
	(In thousands of persons)				(Percent change)			
Total employment	15,439	15,799	15,373	15,017	2.8	2.3	-2.7	-2.3
Agriculture, hunting, and forestry	3,985	3,962	3,944	3,932	-0.6	-0.6	-0.6	-0.3
Industry	3,740	3,701	3,429	3,223	0.3	-1.1	-7.3	-6.0
Mining and quarrying	336	313	272	241	-5.8	-7.0	-12.9	-11.6
Manufacturing	3,126	3,120	2,900	2,733	1.0	-0.2	-7.0	-5.8
Electricity, gas, and water supply	278	267	256	249	0.1	-4.0	-4.1	-2.8
Construction	908	961	922	868	7.7	5.9	-4.0	-5.9
Trade and repair	2,046	2,205	2,140	2,100	7.6	7.8	-2.9	-1.9
Transport, storage, and communication	878	902	857	814	2.7	2.7	-4.9	-5.1
Education	862	892	913	919	0.6	3.5	2.4	0.6
Health and social welfare	1,031	1,049	1,002	937	1.3	1.7	-4.4	-6.6
Other	1,989	2,128	2,161	2,222	10.1	7.0	1.9	2.8
	(As share of total)				(Percent change)			
Total employment	100.0	100.0	100.0	100.0				
Agriculture, hunting, and forestry	25.8	25.1	25.7	26.2	-3.3	-2.8	2.1	2.1
Industry	24.2	23.4	22.3	21.5	-2.4	-3.3	-4.8	-3.8
Mining and quarrying	2.2	2.0	1.8	1.6	-8.4	-9.1	-10.5	-9.5
Manufacturing	20.2	19.8	18.9	18.2	-1.7	-2.4	-4.5	-3.5
Electricity, gas, and water supply	1.8	1.7	1.7	1.7	-2.6	-6.2	0.0	-0.5
Construction	5.9	6.1	6.0	5.8	4.8	3.4	-1.3	-3.6
Trade and repair	13.3	14.0	13.9	14.0	4.7	5.3	-0.2	0.5
Transport, storage, and communication	5.7	5.7	5.6	5.4	-0.1	0.4	-2.2	-2.9
Education	5.6	5.6	5.9	6.1	-2.2	1.1	5.3	3.0
Health and social welfare	6.7	6.6	6.5	6.2	-1.4	-0.6	-1.7	-4.4
Other	12.9	13.5	14.1	14.8	7.1	4.6	4.7	5.3

Sources: Central Statistical Office; and Fund staff estimates.

Table 9. Poland: Private Sector Employment by Sector, 1997–2000
(Annual averages)

	1997	1998	1999	2000	1997	1998	1999	2000
	(In thousands of persons)				(Percent change)			
Employment in private sector	10,615	11,179	10,983	10,923	10.3	5.3	-1.8	-0.5
Agriculture, hunting, and forestry	3,898	3,891	3,876	3,871	-0.2	-0.2	-0.4	-0.1
Industry	2,471	2,580	2,450	2,384	24.7	4.4	-5.0	-2.7
Mining and quarrying	18	20	23	38	63.6	11.1	13.0	68.1
Manufacturing	2,440	2,545	2,411	2,329	24.6	4.3	-5.3	-3.4
Electricity, gas, and water supply	13	15	16	17	18.2	15.4	9.3	1.2
Construction	828	887	852	812	15.2	7.1	-3.9	-4.7
Trade and repair	1,969	2,149	2,094	2,063	9.1	9.1	-2.6	-1.5
Transport, storage, and communication	285	331	330	318	15.9	16.1	-0.5	-3.6
Education	32	47	48	52	0.0	46.9	2.8	7.2
Health and social welfare	98	112	99	122	18.1	14.3	-11.9	23.9
Other	1,034	1,182	1,235	1,301	20.1	14.3	4.5	5.4
	(Private sector share of total employment)				(Percent change)			
Employment in private sector	68.8	70.8	71.4	72.7	7.3	2.9	1.0	1.8
Agriculture, hunting, and forestry	25.2	24.6	25.2	25.8	-2.9	-2.5	2.4	2.2
Industry	16.0	16.3	15.9	15.9	21.4	2.0	-2.4	-0.4
Mining and quarrying	0.1	0.1	0.1	0.3	59.2	8.6	16.1	72.1
Manufacturing	15.8	16.1	15.7	15.5	21.2	1.9	-2.6	-1.1
Electricity, gas, and water supply	0.1	0.1	0.1	0.1	15.0	12.8	12.4	3.6
Construction	5.4	5.6	5.5	5.4	12.0	4.7	-1.3	-2.4
Trade and repair	12.8	13.6	13.6	13.7	6.2	6.7	0.1	0.8
Transport, storage, and communication	1.8	2.1	2.1	2.1	12.7	13.5	2.3	-1.3
Education	0.2	0.3	0.3	0.3	-2.7	43.5	5.6	9.8
Health and social welfare	0.6	0.7	0.6	0.8	14.9	11.7	-9.4	26.8
Memorandum item								
Total employment	15,439	15,799	15,374	15,018	2.8	2.3	-2.7	-2.3

Sources: Central Statistical Office; and Fund staff estimates.

Table 10. Poland: Population, Labor Force, Employment, and Unemployment, 1997–2001
(In thousands of persons; end of year)

	1997	1998	1999	2000	2001
Population	38,660	38,667	38,654	38,644	38,641 4/
Of which:					
Working age 1/	23,014	23,226	23,424	23,655	23,787 4/
Nonworking age	15,646	15,441	15,230	14,989	14,854 4/
Total employment 2/ 3/	15,941	15,921	15,692	15,159	...
Of which:					
In the public sector	5,073	4,671	4,339	3,989	...
Registered unemployment	1,826	1,831	2,349	2,703	3,115
(In percent of civilian labor force)	10.3	10.4	13.1	15.1	17.4
Reported vacancies	12	7	6	6	5

Source: Data provided by the Polish authorities.

1/ The working age for men/women is defined to be between the ages of 18 and 64/59.

2/ Employment statistics exclude workers doing military service, working in defense and public safety-related institutions, living abroad, or serving a jail sentence. These workers, however, are classified as part of the active labor force. Taking into account the different statistical treatment accorded to these workers, the calculated unemployment rate was close to zero through 1989.

3/ Since 1997- as of September 30.

4/ As of June 30 2001.

Table 11. Poland: Wages and Salaries, 1997–2000

	1997	1998	1999	2000
	(Average monthly wage, in zlotys)			
Nominal gross wage	1,066	1,233	1,697	1,894
Of which:				
Enterprise sector	1,162	1,349	1,835	2,057
Budgetary sector	1,006	1,176	1,652	1,932
Industry	1,145	1,307	1,773	1,942
Mining and quarrying	1,958	2,253	2,944	3,210
Manufacturing	1,015	1,164	1,599	1,756
Electricity, gas, and water supply	1,481	1,695	2,305	2,563
Construction	960	1,133	1,558	1,705
Wholesale and retail trade; goods repair	892	1,041	1,473	1,589
Hotels and restaurants	763	895	1,209	1,301
Transport, storage, and communication	1,135	1,346	1,886	2,144
Financial intermediation	1,641	1,966	2,689	3,257
Real estate and business activities	1,170	1,343	1,890	2,133
Public administration and defense	1,363	1,603	2,180	2,432
Education	977	1,119	1,530	1,835
Health and social work	873	1,003	1,341	1,479
Nominal net wage	877	1,027	...	...
	(Percent change from year earlier)			
Nominal gross wage	22.0	15.7	12.5	11.1
Of which:				
Enterprise sector	23.7	16.1	10.6	11.4
Budgetary sector	23.1	16.9	16.1	15.5
Industry	19.9	14.1	10.5	9.4
Mining and quarrying	16.8	15.1	6.4	8.9
Manufacturing	21.8	14.7	11.8	9.8
Electricity, gas, and water supply	17.8	14.4	11.5	10.9
Construction	25.8	18.0	12.0	9.4
Wholesale and retail trade; goods repair	23.9	16.7	15.2	7.9
Hotel and restaurants	25.7	17.3	10.0	7.5
Transport, storage, and communication	23.8	18.6	14.4	13.2
Financial intermediation	25.4	19.8	12.0	20.7
Real estate and business activities	22.9	14.8	14.8	12.5
Public administration and defense	20.5	17.6	13.5	10.3
Education	23.5	14.5	12.4	18.5
Health and social work	21.9	14.9	10.1	9
Nominal net wage	23.5	17.1	...	...
Consumer price index	14.9	11.8	7.3	10.1

Source: Central Statistical Office.

Table 12. Poland: Price Developments, 1997–2001
(Percent change)

	1997	1998	1999	2000	2001
GDP deflator	14.0	11.8	6.8	7.1	4.4
Of which:					
Consumption 1/	14.9	11.4	7.7	9.9	5.1
Investment 2/	13.3	10.0	5.4	5.9	1.7
Consumer price index (annual average)	14.9	11.8	7.3	10.1	5.5
Commodities	13.3	9.7	5.5	9.6	...
Foodstuffs 3/	12.6	7.7	1.5	10.0	5.0
Alcoholic beverages 4/	13.7	12.7	6.0	5.9	6.6
Other 4/	14.0	11.5	9.3	9.7	...
Services 5/	19.3	17.5	11.1	11.0	...
Consumer price index (end period)	13.2	8.6	9.8	8.5	3.6
Producer prices 6/ (period average)					
Industry	12.2	7.3	5.7	7.8	1.6
Mining and quarrying	16.4	8.5	5.0	10.7	5.1
Manufacturing	8.7	6.5	5.0	7.5	-0.2
Electricity, gas, and water supply	11.3	10.0	9.6	8.4	11.3
Construction and assembly production	14.2	12.9	8.6	7.9	3.8
Retail Prices 7/					
Alcoholic beverages	14.0	13.2	6.6	7.2	8.8
Fuel	15.9	6.9	-1.1	8.8	9.3
Medicines	14.9	16.3	15.6	12.6	7.5
Electricity	16.7	14.0	10.7	8.8	14.1
Gas	13.5	16.5	8.4	17.2	11.7
Central heating and hot water	22.0	23.6	5.5	4.3	6.9

Sources: Data provided by the Polish authorities; and Fund staff calculations.
1/ Final consumption expenditure.
2/ Gross fixed capital formation.
3/ In 1999 excluding catering establishments.
4/ In 1999 excluding tobbaco products.
5/ In 1999 including catering establishments.
6/ According to the Polish version of the NACE-EKD classification system. Until 1993 indices include VAT; 1994-95 excluding VAT, including excise tax; from 1996 onwards excluding VAT and excise tax.
7/ The range of prices administered by the state has fallen over time. In 1997: the price of spirit alcohol was controlled; furnace fuels (coal, wood) are no longer controlled; control of medicine prices applies to a limited range of domestically produced pharmaceutical goods; the price of natural gas delivered through municipal installations is controlled; the state sets maximum prices for central heating and hot water - the index measures actual prices in force, which are sometimes below the state-set maximum.

Table 13. Poland: Recent Price Developments, 1998-2001
(Percent change from a year earlier)

	1998				1999				2000				2001			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Consumer price index	13.9	13.1	11.2	9.2	6.2	6.4	7.2	9.2	10.3	10.0	10.8	9.2	6.7	6.6	4.9	3.7
Commodities	14.0	11.1	9.0	7.0	4.3	4.3	5.6	8.0	9.7	9.9	10.6	8.3	...	...	...	...
Foodstuffs	10.6	9.2	6.8	3.8	0.2	-0.3	1.0	5.2	8.6	9.6	12.6	9.3	6.9	7.3	3.6	2.2
Alcoholic beverages	13.5	13.3	12.5	11.8	7.7	4.9	5.1	6.5	5.5	5.9	6.0	6.1	6.7	7.3	6.9	5.5
Other	13.3	12.2	10.9	10.0	7.1	8.1	9.2	10.6	11.3	10.7	9.4	7.5	...	...	...	...
Services	19.1	18.6	17.3	15.2	10.6	11.1	10.6	11.9	11.4	10.1	11.3	11.3	...	...	...	...
Consumer price index (end period)	13.9	12.2	10.6	8.6	6.2	6.5	8.0	9.8	10.3	10.2	10.3	8.5	6.2	6.2	4.3	3.6
Producer prices																
Industry	9.2	8.0	6.7	5.2	4.7	5.1	5.8	7.5	7.9	8.1	8.5	6.9	4.2	2.2	0.8	-0.6
Mining and quarrying	13.8	9.6	6.6	4.4	2.2	4.3	5.4	8.1	9.4	10.3	12.2	11.0	8.9	5.3	4.5	2.0
Manufacturing	8.2	7.4	6.0	4.5	3.9	4.4	5.1	6.8	7.6	8.1	8.2	6.2	2.7	0.4	-1.2	-2.7
Electricity, gas, and water supply	9.5	10.3	10.1	10.0	6.0	10.5	11.0	11.0	8.1	6.5	9.1	9.9	11.5	11.7	11.5	10.8
Construction and assembly production	15.5	14.4	13.0	11.1	9.4	8.3	8.0	8.7	7.7	8.6	8.5	7.3	6.3	4.4	3.4	2.5

Source: Data provided by the Polish authorities.

Table 14. Poland: Monetary Survey, 1997–2001
(In billions of Zlotys)

	1997	1998	1999				2000				2001			
			1999Q1	1999Q2	1999Q3	1999Q4	2000Q1	2000Q2	2000Q3	2000Q4	2001Q1	2001Q2	2001Q3	2001Q4
Net international reserves	82.8	96.3	106.3	99.5	110.2	110.7	112.1	122.3	122.4	132.1	137.1	128.2	140.1	134.7
(in billions of U.S. dollars)	23.5	27.5	26.5	25.3	26.8	26.7	26.6	27.9	27.0	31.9	33.4	32.1	33.1	33.8
Net domestic assets	93.6	124.5	124.0	136.7	135.8	152.8	143.2	162.6	158.2	162.3	163.9	179.4	180.6	200.1
Credit to nongovernment	108.3	138.5	148.6	155.8	167.2	175.9	179.6	203.4	204.1	206.4	211.0	213.5	255.9	222.0
Credit to government, net	55.3	61.3	63.9	65.2	61.6	64.7	57	58.6	57.9	50.7	45.4	49.4	53.6	67.9
Other items, net	-70.0	-75.4	-88.5	-84.3	-92.8	-87.8	-93.4	-99.5	-103.8	-94.8	-92.4	-83.6	-98.9	-89.8
Money and quasi money 1/	176.4	220.8	230.3	236.2	246.0	263.5	255.3	284.9	280.6	294.4	301.0	307.5	320.7	334.8
Zloty money	145.6	187.1	193.2	199.8	207.6	223.8	215.4	240.4	235.7	251.4	254.9	261.6	269.6	281.8
Foreign currency deposits	30.8	33.6	37.1	36.4	38.4	39.7	39.8	44.4	44.8	43.0	46.1	45.9	51.1	53.0
Memorandum items (in percent)														
Broad money growth (12-month)	29.1	25.1	27.6	22.9	20.9	19.4	10.9	20.6	14.1	11.7	17.9	8.0	14.3	13.7
Real broad money growth (12-month)	14.0	15.4	20.2	15.4	11.9	8.7	0.6	9.4	3.4	3.0	11.0	1.6	9.5	9.8
Real growth of credit to nongovernment	18.0	18.7	21.9	19.8	18.2	15.7	9.6	18.4	10.7	8.1	10.6	-1.2	6.1	3.9
Share of foreign currency deposits in broad money	17.5	15.2	16.1	15.4	15.6	15.1	15.6	15.6	16.0	14.6	15.3	14.9	15.9	15.8

Source: National Bank of Poland.
1/ There was a break in this series at the end of 1996.

Table 15. Poland: Balance Sheet of the National Bank of Poland, 1997–2001
(In billions of zloty; stocks at end of period)

	1997	1998	1999	2000	2001
Net foreign assets	72.7	95.6	105.9	112.2	103.8
(In millions of U.S. dollars)	20,670	27,283	25,520	27,081	26,051
Net domestic assets	-30.4	-41.8	-60.0	-63.0	-43.9
Claims on banks	7.7	7.6	7.1	6.9	5.8
Refinancing credit	7.7	7.1	6.6	6.5	5.6
Other	0.0	0.4	0.5	0.4	0.2
Nonreserve liabilities to banks	-15.7	-28.6	-11.1	-20.5	-6.8
Reverse repos	-1.3	0.0	0.0	0.0	0.0
NBP securities	-14.4	-28.6	-11.1	-20.5	-6.8
Net credit to general government	12.5	13.8	11.8	7.0	10.7
Other items, net	-34.9	-34.6	-67.7	-56.4	-53.7
Reserve money	42.3	53.6	52.8	48.8	59.7
Currency	31.1	34.0	43.4	38.6	43.1
Bank deposits	11.2	19.7	9.4	10.2	16.6
Memorandum items:					
Money multiplier 1/	4.16	4.12	4.99	6.04	5.61
Currency-deposit ratio 2/ 3/	18.3	15.9	16.9	13.1	12.9
Obligatory reserve ratios 3/					
Zloty demand deposits	20.0	20.0	5.0	5.0	5.0
Zloty time deposits	11.0	11.0	5.0	5.0	5.0
Foreign currency deposits	5.0	5.0	5.0	5.0	5.0

Sources: Polish authorities; IMF, International Financial Statistics; and Fund staff estimates.

1/ Broad money divided by reserve money.

2/ Currency outside banks to toal deposits of banking sector.

3/ In percent.

Table 16. Poland: Interest Rates, 1997–2001 1/
(In percent)

	NBP Rates		Market Rates					
	Refinance 2/	Intervention 3/	Six-Month Deposits 4/	Prime Lending 5/	Treasury Bills 13-Week	26-Week	52-Week	WIBOR 6/ 3-Month
1997								
March	25.0	21.8	17.7	24.2	21.0	21.0	21.2	22.6
June	25.0	22.1	17.7	24.6	20.9	21.5	21.6	22.7
September	27.0	23.5	18.6	26.0	22.9	23.2	23.3	25.4
December	27.0	23.5	18.6	26.3	23.5	23.7	23.9	25.7
1998								
March	27.0	24.0	18.7	26.8	21.8	22.2	22.5	25.1
June	26.0	21.5	18.3	25.7	20.9	20.9	20.4	22.1
September	24.0	18.0	16.6	23.5	17.3	...	16.2	18.8
December	20.0	15.5	12.6	19.6	13.6	13.4	12.3	15.9
1999								
March	17.0	13.0	10.2	16.4	12.4	12.4	12.1	13.2
June	17.0	13.0	10.4	16.4	12.3	12.3	12.1	13.3
September	17.0	14.0	10.5	16.1	12.4	...	12.6	14.3
December	20.5	16.5	13.0	20.1	16.2	16.4	16.0	19.0
2000								
January	20.5	16.5	13.1	19.3	15.9	16.2	16.2	17.2
February	21.5	17.5	13.1	19.4	15.9	16.7	17.1	17.8
March	21.5	17.5	13.5	19.6	16.4	17.4	17.7	18.4
April	21.5	17.5	13.7	19.6	16.3	17.1	17.2	18.3
May	21.5	17.5	13.6	19.5	16.8	17.7	17.9	18.6
June	21.5	17.5	13.6	19.7	16.4	...	17.9	18.5
July	21.5	17.5	13.8	19.6	16.3	...	17.7	18.5
August	23.0	19.0	13.6	20.0	17.2	18.8	18.3	19.1
September	23.0	19.0	13.7	20.7	17.7	...	18.3	19.6
October	23.0	19.0	14.2	20.9	17.0	...	18.1	19.7
November	23.0	19.0	14.4	20.8	16.8	17.7	18.0	19.8
December	23.0	19.0	14.4	20.9	16.8	17.2	17.7	19.7
2001								
January	23.0	19.0	14.4	20.7	16.9	17.2	16.9	19.0
February	22.0	18.0	14.4	20.6	17.0	17.1	16.7	18.6
March	21.0	17.0	13.4	19.6	17.1	17.0	16.7	18.0
April	21.0	17.0	12.5	19.3	16.3	16.2	15.7	17.2
May	21.0	17.0	12.4	19.1	16.0	15.9	15.4	17.2
June	19.5	15.5	12.2	13.7	16.0	16.0	15.4	16.9
July	19.5	15.5	11.1	17.9	14.8	...	15.1	16.0
August	18.5	14.5	10.4	17.9	13.8	...	14.4	15.4
September	18.5	14.5	10.1	17.6	13.8	...	13.9	14.7
October	17.0	13.0	9.6	16.9	13.1	...	12.5	14.0
November	15.5	11.5	8.8	16.3	...	12.1	11.7	13.9
December	15.5	11.5	7.5	15.4	11.1	11.2	10.8	12.3

Sources: Data provided by the Polish authorities.

1/ The NBP refinance rate and the deposit and lending rates are end-period values, while all the other rates are monthly averages.
2/ From January 1996, the refinancing rate for central investment loans guaranteed by the State Treasury is equal to the Lombard rate (shown in the table); for other refinancing loans the rate is 1 point higher.
3/ 28-day reverse repo in 1998 and 1999.
4/ Midpoint of the range of rates offered by principal commercial banks.
5/ Monthly weighted prime lending rate on low risk loans.
6/ Warsaw interbank offered rate.

Table 17. Poland: Reserve Requirements Ratios, 1997–2001
(In percent)

	On Zloty Demand Deposits	On Zloty Time Deposits	On Foreign Currency Demand Deposits
1997			
March	20.0	9.0	4.0
June	20.0	11.0	5.0
September	20.0	11.0	5.0
December	20.0	11.0	5.0
1998			
March	20.0	11.0	5.0
June	20.0	11.0	5.0
September	20.0	11.0	5.0
December	20.0	11.0	5.0
1999			
January	20.0	11.0	5.0
February	20.0	11.0	5.0
March	20.0	11.0	5.0
April	20.0	11.0	5.0
May	20.0	11.0	5.0
June	20.0	11.0	5.0
July	20.0	11.0	5.0
August	20.0	11.0	5.0
September	5.0	5.0	5.0
October	5.0	5.0	5.0
November	5.0	5.0	5.0
December	5.0	5.0	5.0
2000			
January	5.0	5.0	5.0
February	5.0	5.0	5.0
March	5.0	5.0	5.0
April	5.0	5.0	5.0
May	5.0	5.0	5.0
June	5.0	5.0	5.0
July	5.0	5.0	5.0
August	5.0	5.0	5.0
September	5.0	5.0	5.0
October	5.0	5.0	5.0
November	5.0	5.0	5.0
December	5.0	5.0	5.0
2001			
January	5.0	5.0	5.0
February	5.0	5.0	5.0
March	5.0	5.0	5.0
April	5.0	5.0	5.0
May	5.0	5.0	5.0
June	5.0	5.0	5.0
July	5.0	5.0	5.0
August	5.0	5.0	5.0
September	5.0	5.0	5.0
October	5.0	5.0	5.0
November	5.0	5.0	5.0
December	5.0	5.0	5.0

Source: National Bank of Poland.

Table 18. Poland: Consolidated General Government Operations, 1997–2000 1/

	1997	1998	1999	2000
	(In billions of zlotys)			
Revenue and grants of general government	197.6	225.2	252.7	271.6
Tax revenue	166.9	191.5	207.8	226.5
Direct taxes	95.9	112.0	118.4	131.3
Personal income tax	38.9	45.4	32.6	32.3
Profit tax	14.0	15.6	16.0	17.9
Social security contributions	43.0	51.0	69.8	81.1
Indirect taxes	54.9	64.1	74.3	79.6
Turnover, VAT	37.0	43.0	49.0	52.2
Excises	17.9	21.1	25.3	27.4
International trade taxes	7.0	6.1	5.6	5.1
Other	9.1	9.3	9.5	10.5
Nontax revenue	27.6	29.9	40.2	41.0
Dividend	0.3	0.2	0.3	0.4
Central bank transfer	1.1	0.3	0.5	2.2
Other	26.2	29.4	39.4	38.4
Capital revenue	3.1	3.8	4.4	3.4
Grants				
Expenditure of general government 2/	206.5	235.6	259.8	271.7
Current expenditure	194.5	220.1	251.8	275.4
Wages and salaries	35.6	40.0	43.6	48.6
Subsidies	9.4	9.2	5.6	6.1
Transfers to households and nonprofits	95.0	106.5	120.1	135.2
Interest payments	16.2	18.0	19.0	18.5
Other current expenditure	38.3	46.4	63.5	67.0
Investment expenditure	16.7	20.3	19.0	21.0
Net lending	-4.7	-5.0	-11.0	-24.7
Overall balance	-6.8	-10.2	-7.1	-0.1
State budget	-5.8	-10.0	-5.9	11.5
Rest of general government	-1.0	-0.4	-1.2	-11.6
Financing	8.9	10.2	7.1	0.1
Domestic	9.0	5.3	4.3	-1.4
Bank	6.4	-1.3	2.0	-4.6
Nonbank	2.6	6.6	2.3	3.2
Foreign (net)	-0.1	1.0	0.6	0.3
Change in arrears	0.0	3.9	2.2	1.2
	(In percent of GDP) 3/			
Revenue of general government	41.8	40.7	41.1	39.7
Tax revenue	35.3	34.6	33.8	33.1
Nontax revenue	5.8	5.4	6.5	6.0
Capital revenue	0.7	0.7	0.7	0.5
Grants				
Expenditure of general government 2/	43.7	42.5	42.2	39.7
Current expenditure	41.2	39.8	40.9	40.2
Investment expenditure	3.5	3.7	3.1	3.1
Net lending	-1.0	-0.9	-1.8	-3.6
Overall balance	-1.9	-1.8	-1.2	0.0
State budget	-1.2	-1.8	-1.0	1.7
Rest of general government	-0.2	-0.1	-0.2	-1.7
Financing	1.9	1.8	1.2	0.0

Source: Data provided by the Polish authorities.

1/ Data are on a cash basis except for state budget expenditure, which is on a domestic commitments basis. As of 1994, the data are compiled according to GFS. Hence, 1994-99 data may not be strictly comparable with previous years.

2/ Expenditure includes net lending.

3/ Since 1994 data on GDP includes the broad ranging estimates of the "hidden economy."

Table 19. Poland: Components of General Government Budget, 1997–2000 1/

	1997	1998	1999	2000
	(In billions of zlotys)			
A. State budget				
Revenue	113.0	126.5	126.0	135.7
Expenditure	121.1	136.3	131.0	133.4
Balance	-8.1	-9.8	-5.0	2.3
B. Local authorities				
Revenue	39.1	45.7	64.0	71.5
Of which: intra-government transfers	0.2	0.2	0.2	0.2
Expenditure	40.1	47.1	65.0	74.6
Of which: intra-government transfers	3.7	4.4	4.7	2.5
Balance	-1.0	-1.4	-1.0	-3.1
C. Extrabudgetary funds				
Revenue	81.8	92.4	95.5	104.3
Of which: intra-government transfers	28.7	29.1	26.9	33.6
Expenditure	82.7	92.3	102.3	108.5
Of which: intra-government transfers	0.1	0.2	4.0	2.0
Balance	-0.8	0.1	-6.8	-4.2
D. Extrabudgetary units of the state budget				
Revenue	10.7	12.4	12.3	13.9
Of which: intra-government transfers	4.3	5.0	5.4	5.6
Expenditure	10.2	11.9	11.4	13.1
Of which: intra-government transfers	1.8	2.1	1.2	1.2
Balance	0.5	0.5	0.9	0.8
E. Extrabudgetary units of the local authorities				
Revenue	11.4	12.9	37.0	36.8
Of which: intra-government transfers	3.7	4.4	4.7	2.5
Expenditure	11.3	12.7	37.4	35.7
Of which: intra-government transfers	0.2	0.2	0.2	0.2
Balance	0.1	0.2	-0.4	1.1
F. Consolidated general government				
Revenue	197.6	225.2	252.7	271.6
Expenditure	206.5	235.4	259.8	271.7
Balance	-8.9	-10.2	-7.1	-0.1
Change in arrears	0.0	3.9	2.2	1.2
Balance (cash basis)	-8.9	-6.3	-4.9	1.1
	(In percent of GDP) 2/			
State budget				
Revenue	23.9	22.9	20.5	19.8
Expenditure	25.6	24.6	21.3	19.5
Balance	-1.7	-1.8	-0.8	0.3
Consolidated general government				
Revenue	41.8	40.7	41.1	39.7
Expenditure	43.7	42.5	42.2	39.7
Balance	-1.9	-1.8	-1.2	0.0
Change in arrears	0.0	0.7	0.4	0.2
Balance (cash basis)	-1.9	-1.1	-0.8	0.2
Memorandum items: (cash basis, national definition)				
State budget balance (In billions of zlotys)	-12.4	-13.2	-12.5	-15.4
State budget balance (percent of GDP)	-2.6	-2.4	-2.0	-2.2

Source: Data provided by the Polish authorities.

1/ Data are on a cash basis except for state budget expenditure, which is on a domestic commitments basis. As of 1994, the data are compiled according to GFS. Hence, 1994-98 data may not be strictly comparable with previous years.

2/ Since 1994 data on GDP includes broad ranging estimates of the "hidden economy."

Table 20. Poland: State Budget Revenue, 1997–2001 1/

	1997	1998	1999	2000	2001
	(In billions of zlotys)				
Total revenue 2/	113.2	126.6	125.9	135.7	140.5
Tax revenue	105.7	120.0	118.3	124.7	123.2
Direct taxes	43.2	49.5	38.2	40.0	36.7
Personal income tax	29.9	34.7	23.1	23.1	23.4
Enterprise income tax	13.3	14.8	15.1	16.9	13.2
Domestic indirect taxes	55.3	64.4	74.6	73.7	82.4
Of which: Value-added tax 3/	36.9	42.9	48.8	51.7	52.9
Excise revenues	17.9	21.1	25.2	27.3	28.9
Trade taxes	7.0	6.1	5.6	5.1	4.1
Import surcharge (incl. various levies)	...	...	...	...	...
Customs duties	7.0	6.1	5.6	5.1	4.1
Others (incl. taxes abolished)	0.2	0.0	0.0	0.0	0.0
Nontax revenue	7.0	6.5	7.5	10.8	16.2
Transfers from NBP	1.1	0.3	0.5	2.2	4.9
Dividend requirement	1.2	1.0	0.6	0.9	0.9
Receipts from abroad	0.5	0.0	0.1	0.1	1.2
Interest	1.2	1.8	1.7	2.0	2.0
Receipts of budget units, other revenue	3.0	3.4	4.6	5.6	7.2
Privatization	6.5	7.1	13.3	26.7	6.1
	(In percent of GDP) 4/				
Total revenue	24.0	24.9	20.5	19.8	19.5
Tax revenue	22.4	21.7	19.2	18.2	17.1
Direct taxes	9.3	9.0	6.2	5.8	5.1
Personal income tax	6.3	6.3	3.8	3.4	3.2
Enterprise income tax	2.8	2.7	2.4	2.5	1.8
Domestic indirect taxes	14.7	11.6	12.1	11.6	11.4
Of which: Value-added tax 3/	7.8	7.7	7.9	7.6	7.3
Excise revenues	3.8	3.8	4.1	4.0	4.0
Trade taxes	1.5	1.1	0.9	0.7	0.6
Others (incl. taxes abolished)	0.0	0.0	0.0	0.0	0.0
Nontax revenue	1.5	1.2	1.2	1.6	2.2
Privatization	1.4	1.3	2.2	3.9	0.9

Source: Data provided by the authorities.

1/ Revenues are on a national presentation rather than GFS basis.

2/ Excluding privatization.

3/ Includes turnover tax through 1995.

4/ Since 1994 data on GDP includes the broad ranging estimates of the "hidden economy."

Table 21. Poland: State Budget Expenditure, 1997–2001 1/ 2/

	1997	1998	1999	2000	2001
	(In billions of zlotys)				
Total expenditure and net lending (cash basis)	125.7	139.8	138.4	151.1	172.9
Current expenditure	117.7	130.2	130.7	143.3	166.3
Wages	18.5	20.0	11.0	11.9	13.9
Social security contributions for civil servants	6.6	6.1	1.7	2.1	3.0
Other purchases of goods and services	16.2	19.6	12.9	13.0	12.2
Interest	16.3	18.3	18.7	17.7	20.7
Domestic	12.7	14.5	14.8	13.4	17.0
Foreign	3.7	3.8	3.9	4.3	3.7
Subsidies	14.7	15.8	16.5	15.6	17.6
Transfers (excluding to local governments) 3/	31.7	33.7	36.2	44.0	55.0
Transfers to local governments	13.7	16.7	33.7	39.1	43.8
Capital expenditure and net lending	7.7	9.4	7.7	7.7	6.6
Capital expenditure and capital grants	7.7	9.4	7.3	7.4	6.4
Net lending (invoked guarantees)	0.3	0.1	0.3	0.3	0.2
Changes in arrears and residual	0.0	3.9	2.2	1.2	-1.4
Total expenditure and net lending on domestic commitment basis	125.6	143.7	140.6	152.3	171.5
	(In percent of GDP) 4/				
Total expenditure and net lending (cash basis)	26.6	25.2	22.5	22.1	24.0
Current expenditure	24.9	23.5	21.3	20.9	23.0
Wages	3.9	3.6	1.8	1.7	1.9
Social security contributions	1.4	1.1	0.3	0.3	0.4
Purchase of goods and services	3.4	3.5	2.1	1.9	1.7
Interest	3.5	3.3	3.0	2.6	2.9
Domestic	2.7	2.6	2.4	2.0	2.4
Foreign	0.8	0.7	0.6	0.6	0.5
Subsidies	3.1	2.8	2.7	2.3	2.4
Transfers (excluding to local governments) 3/	6.7	6.1	5.9	6.4	7.6
Transfers to local governments	2.9	3.0	5.5	5.7	6.1
Capital expenditure and net lending	1.7	1.7	1.2	1.1	0.9
Capital expenditure and capital grants	1.6	1.7	1.2	1.1	0.9
Net lending (invoked guarantees)	0.1	0.0	0.0	0.0	0.0
Changes in arrears and residual	0.0	0.7	0.4	0.2	...
Total expenditure and net lending on domestic commitment basis	26.6	26.0	22.9	22.2	23.8

Source: Data provided by the Polish authorities.

1/ Expenditures are on a national presentation rather than GFS basis.

2/ Totals may differ from sums because of rounding erros.

3/ Includes pensions for uniformed personnel, and transfers to other state pension funds, the labor fund,other funds and households.

4/ Since 1994 data on GDP includes the broad ranging estimates of the "hidden economy."

Table 22. Poland: Operations of Extra-Budgetary Funds, 1997–2000 1/

	1997	1998	1999	2000
	(In billions of zlotys)			
Extra-Budgetary Funds - Total				
Contributions and own revenues	64.3	73.8	75.1	77.2
Expenditures	85.5	94.6	105.8	112.7
Balance before budget transfer	-21.2	-20.8	-30.7	-35.5
Budget transfer	20.4	21.0	24.4	30.8
Overall balance	-0.8	0.2	-6.3	-4.7
Of which:				
I. Main Social Insurance Funds - Total				
Contributions and own revenues	59.9	68.1	69.5	71.6
Expenditures	80.9	89.1	99.1	106.3
Balance before budget transfer	-21.0	-21.0	-29.5	-34.7
Budget transfer	19.8	20.3	23.5	29.8
Overall balance	-1.2	-0.7	-6.0	-5.0
II. Other Funds - Total				
Own revenues	4.5	5.7	5.6	5.6
Expenditures	4.6	5.5	6.7	6.4
Balance before budget transfer	-0.2	0.2	-1.1	-0.8
Budget transfer	0.6	0.7	0.9	1.0
Overall balance	0.5	0.8	-0.3	0.2
	(In percent of GDP) 2/			
Extra-Budgetary Funds - Total				
Contributions and own revenues	13.6	13.3	12.2	11.3
Expenditures	18.1	17.1	17.2	16.5
Balance before budget transfer	-4.5	-3.8	-5.0	-5.2
Budget transfer	4.3	3.8	4.0	4.5
Overall balance	-0.2	0.0	-1.0	-0.7
Of which:				
I. Main Social Insurance Funds - Total				
Contributions and own revenues	12.7	12.3	11.3	10.5
Expenditures	17.1	16.1	16.1	15.5
Balance before budget transfer	-4.5	-3.8	-4.8	-5.1
Budget transfer	4.2	3.7	3.8	4.4
Overall balance	-0.3	-0.1	-1.0	-0.7
II. Other Funds - Total				
Own revenues	1.0	1.0	0.9	0.8
Expenditures	1.0	1.0	1.1	0.9
Balance before budget transfer	0.0	0.0	-0.2	-0.1
Budget transfer	0.1	0.1	0.1	0.1
Overall balance	0.1	0.1	0.0	0.0

Source: Data provided by the Polish authorities.

1/ Data are on a cash basis. There were 18 funds in 1992, 17 in 1993, 18 in 1994, 17 in 1995, 17 in 1996, 20 in 1997, and 20 in 1998.

2/ Since 1994 data includes broad range estimates of the "hidden economy."

Table 23. Poland: Operations of Main Extra-Budgetary Funds, 1997–2001 1/

	1997	1998	1999	2000	2001 Prel.
	(In billions of zlotys)				
FUS -- Social Insurance Fund					
Contributions and own revenues	55.6	63.2	63.9	65.5	70.5
Expenditures	64.0	72.9	79.8	84.9	95.4
Of which: pensions	54.2	62.4	69.6	74.6	84.1
Balance before budget transfer	-8.4	-9.7	-15.8	-19.3	-34.9
Budget transfer	7.0	8.8	9.9	15.7	21.2
Overall balance	-1.4	-0.9	-5.9	-3.6	-3.7
KRUS -- Farmers' Social Insurance Fund					
Contributions and own revenues	0.6	0.7	0.8	0.8	0.9
Expenditures	10.1	11.3	13.7	14.3	15.8
Of which: pensions	9.2	10.4	11.5	12.0	13.0
Balance before budget transfer	-9.5	-10.6	-12.9	-13.5	-14.9
Budget transfer	9.4	10.7	12.9	13.2	14.9
Overall balance	-0.1	0.0	0.0	-0.3	0.0
FP -- Labor Fund					
Contributions and own revenues	3.6	4.3	4.8	5.3	5.8
Expenditures	6.7	4.9	5.6	7.2	8.3
Of which: unemployment benefits	3.3	1.6	2.0	2.7	3.0
Balance before budget transfer	-3.1	-0.7	-0.8	-1.9	-2.7
Budget transfer	3.4	0.9	0.7	0.8	2.6
Overall balance	0.3	0.2	-0.1	-1.1	0.0
	(In percent of GDP)				
FUS -- Social Insurance Fund					
Contributions and own revenues	11.8	11.4	10.4	9.6	9.8
Expenditures	13.6	13.2	13.0	12.4	13.2
Of which: pensions	11.5	11.3	11.3	10.9	11.7
Balance before budget transfer	-1.8	-1.8	-2.6	-2.8	2.5
Budget transfer	1.5	1.6	1.6	2.3	3.0
Overall balance	-0.3	-0.2	-1.0	-0.5	-0.5
KRUS -- Farmers' Social Insurance Fund					
Contributions and own revenues	0.1	0.1	0.1	0.1	0.1
Expenditures	2.1	2.0	2.2	2.1	2.2
Of which: pensions	2.0	1.9	1.9	1.8	1.8
Balance before budget transfer	-2.0	-1.9	-2.1	-2.0	-2.1
Budget transfer	2.0	1.9	2.1	1.9	2.1
Overall balance	0.0	0.0	0.0	0.0	0.0
FP -- Labor Fund					
Contributions and own revenues	0.8	0.8	0.8	0.8	0.8
Expenditures	1.4	0.9	0.9	1.1	1.2
Of which: unemployment benefits	0.7	0.3	0.3	0.4	0.4
Balance before budget transfer	-0.7	-0.1	-0.1	-0.3	-0.4
Budget transfer	0.7	0.2	0.1	0.1	0.4
Overall balance	0.1	0.0	0.0	-0.2	0.0
	(In percent of total revenues of respective funds)				
Memorandum items:					
State budget transfers to:					
Social Insurance Fund (FUS)	11.2	12.2	13.5	19.4	23.1
Farmers' Social Insurance Fund (KRUS)	93.8	94.1	94.5	94.3	94.3
Labor Fund (FP)	48.6	17.2	12.3	13.8	31.9

Sources: Data provided by the Polish authorities; and Fund staff estimates.
1/ On a cash basis for 2001.

Table 24. Poland: State Debt Stock, 1997–2001 1/

	1997	1998	1999 2/	2000	2001
	(In billions of złotys)				
Total public debt	221.6	237.4	264.4	266.8	283.9
Domestic debt	104.1	121.2	134.7	146.0	185.0
Central bank	16.3	17.1	19.3	16.8	18.2
Commercial banks	50.1	49.0	57.5	49.9	60.7
Domestic nonbanks	32.2	44.5	50.7	61.5	85.5
Foreigners	5.4	10.5	7.2	17.8	20.7
Foreign Debt	117.6	116.2	129.7	120.8	98.9
	(In percent of GDP)				
Total public debt	46.9	42.9	43.0	39.0	39.3
Domestic debt	22.0	21.9	21.9	21.3	25.6
Central bank	3.5	3.1	3.1	2.5	2.5
Commercial banks	10.6	8.8	9.3	7.3	8.4
Domestic nonbanks	6.8	8.0	8.2	9.0	11.8
Foreigners	1.2	1.9	1.2	2.6	2.9
Foreign Debt	24.9	21.0	21.1	17.6	13.7
Memorandum item					
End-year exchange rate	3.5	3.5	4.1	4.1	4.0

Sources: Data provided by the Polish authorities; and Fund staff estimates.
1/ End-year stocks at face value.
2/ Since the end of 1999 data on domestic debt include financial flows between sectors.

Table 25. Poland: Exchange Rate Policy Developments 1990–2002 (continued)

Period	Exchange Rate Policy	Action	Comments
Before 1990	Multiple exchange rates, adjustable peg to a basket of currencies	Frequent and substantial devaluations	
Jan. 1, 1990	Fixed exchange rate system	Unification of official and black market rates Devaluation (46.2 percent)	Exchange rate: Zl 9,500 per U.S. dollar
May. 17, 1991	Fixed exchange rate system	Devaluation (16.8 percent against the dollar). Shift from a dollar peg to a basket peg	Exchange rate: Zl 11,100 per U.S. dollar. Basket includes: U.S. dollar (45 percent), deutsche mark (35 percent), pound sterling (10 percent), French franc (5 percent), Swiss franc (5
Oct. 15, 1991	Preannounced crawling peg	Rate of crawl announced: 1.8 percent per month (Zl 9 per day)	
Feb. 26, 1992	Preannounced crawling peg	Devaluation (12.0 percent against the basket). Rate of crawl: 1.8 percent per month (Zl 11 per day)	Exchange rate: Zl 13,360 per U.S. dollar
Jul. 10, 1992	Preannounced crawling peg	Rate of crawl: 1.8 percent per month (Zl 12 per day)	Basket unchanged Technical adjustment made
Aug. 27, 1993	Preannounced crawling peg	Devaluation (8.0 percent against the basket) Rate of crawl reduced: 1.6 percent per month (Zl 15 per day)	Basket unchanged
Sep. 13, 1994	Preannounced crawling peg	Rate of crawl reduced: 1.5 percent per month	Basket unchanged
Nov. 30, 1994	Preannounced crawling peg	Rate of crawl reduced: 1.4 percent per month	Basket unchanged
Jan. 1, 1995	Redenomination	One new zloty equal to 10,000 old zlotys	
Feb. 16, 1995	Preannounced crawling peg	Rate of crawl reduced: 1.2 percent per month	Basket unchanged
Mar. 6, 1995	Preannounced crawling peg	Increase in the spread for NBP/banks transactions to +/- 2 percent around the NBP mean rate	Basket unchanged
May. 16, 1995	Preannounced crawling peg, with the fixing rate fluctuating within +/- 7 percent around central parity	Initial appreciation of fixing rate to 5 percent below central parity (3 percent below NBP buying rate). Rate of crawl: 1.2 percent per month	Basket unchanged
Sep. 8, 1995	Preannounced crawling peg, with the fixing rate fluctuating within +/- 7 percent around central parity	Further appreciation to 6 percent below central parity. Rate of crawl: 1.2 percent per month	Basket unchanged
Dec. 22, 1995	Preannounced crawling peg, with the fixing rate fluctuating within +/- 7 percent around central parity	Official appreciation of the central parity by 6 percent, initial appreciation of the fixing rate to 2.5 percent below the new central parity. Rate of crawl: 1.2 percent per month	Basket unchanged
Jan. 8, 1996	Preannounced crawling peg, with the fixing rate fluctuating within +/- 7 percent around central parity	Rate of crawl reduced: 1 percent per month	Basket unchanged
Feb. 26, 1998	Preannounced crawling peg, with the fixing rate fluctuating within +/- 10 percent around central parity	Rate of crawl reduced: 0.8 percent per month	Basket unchanged

Table 25. Poland: Exchange Rate Policy Developments 1990–2002 (concluded)

Period	Exchange Rate Policy	Action	Comments
Jul. 17, 1998	Preannounced crawling peg, with the fixing rate fluctuating within +/- 10 percent around central parity	Rate of crawl reduced: 0.65 percent per month	Basket unchanged
Sep. 10, 1998	Preannounced crawling peg, with the fixing rate fluctuating within +/- 10 percent around central parity	Rate of crawl reduced: 0.5 percent per month	Basket unchanged
Oct. 28, 1998	Preannounced crawling peg, with the fixing rate fluctuating within +/- 12.5 percent around central parity	Rate of crawl maintained: 0.5 percent per month	Basket unchanged
Dec. 15, 1998	Preannounced crawling peg, with the fixing rate fluctuating within +/- 12.5 percent around central parity	Rules of operational fixing changed: introduction of spread (+/- 0.003 percent); minimum amount of transaction raised to US$5 million or DM10 million; fixing time shortened to 15 minutes	Basket unchanged
Jan. 1, 1999	Preannounced crawling peg, with the fixing rate fluctuating within +/- 12.5 percent around central parity	Rate of crawl maintained: 0.5 percent per month	Basket composition changed: euro 55 percent; US dollar 45 percent
Mar. 25, 1999	Preannounced crawling peg, with the fixing rate fluctuating within +/- 15 percent around central parity	Rate of crawl reduced: 0.3 percent per month	Basket unchanged
Jun. 7, 1999	Preannounced crawling peg, with the rate fluctuating within +/- 15 percent around central parity	Abolition of operational fixing	Basket unchanged
Apr. 12, 2000	Adaptation of full float exchange rate arrangement	zloty liberalization: abolition of basket, central parity rate, devaluation rate, and band around central parity rate	

Source: Information provided by Polish authorities.

Table 26. Poland: Effective Exchange Rates, 1997–2001

		Real Effective Exchange Rate 1/		Nominal Effective Exchange Rate 2/
		Wage Based	Price Based	
1997:	I	97.5	122.1	42.0
	II	92.6	121.4	40.7
	III	88.3	117.5	38.8
	IV	87.6	116.8	37.6
1998:	I	92.3	125.4	38.3
	II	94.5	128.7	38.8
	III	89.7	122.5	37.1
	IV	94.1	121.2	36.3
1999:	I	91.6	119.5	34.8
	II	86.7	120.6	34.5
	III	83.1	121.8	34.6
	IV	81.1	119.7	33.1
2000:	I	86.4	130.1	34.9
	II	79.6	129.8	34.2
	III	80.7	133.9	34.9
	IV	82.6	136.4	35.1
2001:	I	90.9	144.3	37.1
	II	95.0	155.8	39.6
	III	85.1	144.7	37.0
	IV	91.3	149.7	38.0

Source: Polish authorities.
1/ 1993Q1=100.
2/ 1992Q1=100.

Table 27. Poland: Evolution of Customs Tariff Structure, 1997–2000 1/
(Percentage rates)

Harmonized Commodity Description and Coding System (HCDDCS)	January			
	1997	1998	1999	2000
All commodities	6.3	4.8	3.5	3.09
Agriculture products	17.3	17.6	16.5	17.73
Industrial products	5.1	3.5	2.3	1.84
Mineral products	2.1	2.3	1.2	0.98
Chemical products	3.4	2.2	1.0	0.88
Plastics	3.9	2.6	1.3	0.85
Fur and leather products	7.9	6.2	3.5	3.11
Wood and paper products	3.6	1.8	0.5	0.18
Textiles, footwear, and clothing	6.9	5.3	3.2	2.64
Industrial mineral and metal products	6.7	4.4	2.4	2.22
Machinery, transport equipment, and precision instruments	9.1	4.0	3.1	2.56
Jewelry, arms, art objects, and miscellaneous manufactured products	6.9	4.5	2.6	2.5

Sources: OECD; and data provided by Polish authorities.

1/ Based on average frequency, including suspended tariffs, free trade agreements, and tariffs on duty-free tariff quotas.

Table 28. Poland: Recent Tariff Developments, 1997–2000 1/
(Percentage rates)

	January 1997 Effective Trade-Weighted Average			January 1998 Effective Trade-Weighted Average			January 1999 Effective Trade-Weighted Average			January 2000 Effective Trade-Weighted Average		
	excl. suspended tariffs and free trade agreements	incl. suspended tariffs, excl. free trade agreements	incl. suspended tariffs and free trade agreements	excl. suspended tariffs and free trade agreements	incl. suspended tariffs, excl. free trade agreements	incl. suspended tariffs and free trade agreements	excl. suspended tariffs and free trade agreements	incl. suspended tariffs, excl. free trade agreements	incl. suspended tariffs and free trade agreements	excl. suspended tariffs and free trade agreements	incl. suspended tariffs, excl. free trade agreements	incl. suspended tariffs and free trade agreements
All commodities	11.61	10.70	5.77	10.92	10.12	4.47	10.79	10.38	3.36	10.95	10.71	3.09
Agricultural products	23.14	18.41	14.07	23.19	22.53	17.13	22.85	22.52	16.32	23.89	23.68	17.73
Animal products	28.05	28.04	24.07	26.95	26.95	22.85	27.82	27.82	22.81	29.91	29.91	26.11
Vegetable products	15.74	10.53	4.46	16.03	15.74	8.12	16.86	16.60	9.09	17.02	16.78	8.96
Fats and oils	15.84	16.84	16.51	20.54	19.91	15.71	18.85	17.72	12.82	20.94	20.24	14.72
Prepared foodstuffs	25.36	22.99	20.64	27.52	26.29	21.86	26.59	26.20	20.35	27.66	27.45	22.18
Industrial products	10.40	9.82	4.82	9.73	8.92	3.24	9.66	9.23	2.14	9.84	9.6	1.84
Mineral products	3.31	3.30	2.06	5.33	5.22	2.19	4.69	4.65	1.16	5.08	4.95	0.98
Chemical products	8.61	8.32	3.24	8.27	7.33	1.92	7.85	7.63	0.91	7.64	7.5	0.88
Plastics	9.12	8.87	3.83	9.20	7.51	2.04	9.26	8.88	1.14	9.25	9.14	0.85
Leather products	10.77	10.77	7.05	12.82	12.82	6.21	12.58	11.26	3.36	11.62	10.82	3.11
Wood products	8.34	8.34	4.39	8.70	8.56	3.04	8.67	8.51	1.31	8.32	7.99	1.7
Wood pulp products	7.31	6.44	2.06	7.50	5.44	0.94	7.53	7.38	0.22	7.65	7.45	0.18
Textile products	13.18	12.88	6.47	13.11	12.95	4.85	12.26	12.03	2.74	12.24	12.1	2.64
Footwear	14.60	14.60	11.37	14.27	14.27	9.01	14.05	14.05	7.59	13.07	13.07	6.56
Stone products	9.26	8.92	3.42	9.24	9.05	1.99	9.27	9.11	0.53	9.2	9.01	0.53
Precious materials	15.33	15.33	7.02	13.52	13.52	4.08	14.48	14.48	2.10	16.5	16.5	2.22
Base metal products	13.58	13.33	6.48	12.64	11.97	4.04	12.11	11.68	2.15	11.2	10.78	1.17
Mechanical & electrical machinery	9.56	8.47	2.98	8.41	7.23	1.78	7.98	7.15	1.16	6.8	6.41	0.99
Transport equipment	20.25	19.52	14.00	15.32	14.79	8.58	17.32	17.18	7.59	23.42	23.31	6.99
Optical products	9.71	8.21	4.41	8.44	7.80	3.52	7.40	6.90	2.77	7.07	6.86	2.56
Arms	29.00	29.00	24.10	27.00	27.00	15.46	25.00	25.00	12.77	23	23	10.02
Misc. manufactured products	11.03	11.03	5.96	10.91	10.91	4.33	10.67	10.67	2.68	10.75	10.75	2.5
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Source: Data provided by the Polish authorities.

1/ Based on CN nomenclature excluding tariffs on duty-free tariff quotas. All rates are weighted with trade structures of the previous year.

Table 29. Poland: Balance of Payments, 1997–2001 1/
(In millions of US dollars)

	1997	1998	1999	2000				2001			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Trade balance	-11,320	-13,720	-14,379	-3,851	-3,022	-3,338	-2,957	-3,147	-2,776	-2,735	-3017
Exports	27,229	30,120	26,349	6,322	6,835	7,168	7,930	7,436	7,508	7,458	7873
Imports	38,549	43,840	40,728	10,173	9,857	10,506	10,887	10,583	10,284	10,193	10890
Services (net)	305	-488	-1,631	-548	-445	-336	-357	-350	-197	-186	-243
Receipts	3,724	3,683	3,298	774	864	934	936	904	952	1,055	1077
Payments	3,419	4,171	4,929	1,319	1,309	1,270	1,293	1,254	1,149	1,241	1320
Transfers (net)	1,150	1,941	1,614	361	423	414	483	372	424	693	497
Private (net)	1,048	1,529	1,392	338	359	355	370	335	388	558	429
Official, net (incl. converted debt)	102	412	222	23	64	59	113	37	36	135	68
Investment income (net)	-455	-569	-795	-203	-116	-71	-369	165	-635	-111	-315
Current account (unadjusted)	-10,320	-12,836	-15,191	-4,241	-3,160	-3,331	-3,200	-2,960	-3,184	-2,339	-3078
Unclassified transactions (net) 2/	6,011	5,995	3,638	728	1,057	1,077	1,118	730	974	1,366	1325
Current account (adjusted)	-4,309	-6,841	-11,553	-3,513	-2,103	-2,254	-2,082	-2,230	-2,210	-973	-1753
Capital and financial account	7,352	12,778	11,720	2,950	1,907	2,303	3,468	3,480	1,700	1,095	468
Capital account	90	72	50	-27	8	-11	43	-3	-5	-3	10
Financial account (incl. errors and omissions)	7,262	12,705	11,670	2,977	1,899	2,314	3,425	3,483	1,705	1,098	458
Direct investment (net)	3,041	4,969	6,352	1,554	1,121	903	4,591	1,347	1,450	1,309	2822
Portfolio investment (net)	1,531	1,694	867	2,421	21	412	-263	2,358	-950	-29	-270
Other investment (net)	-362	4,618	400	-1,958	-143	492	-1,773	-1,067	148	345	-4141
Long-term credit extended (net)	-82	-88	-9	48	16	39	23	-52	-9	26	14
Long-term credit received (net)	416	1,669	2,057	25	55	70	1,100	-326	258	221	-1720
Drawings	1,189	3,238	4,407	707	679	731	2,457	782	1,388	1,430	2313
Repayments	773	1,569	2,350	682	624	661	1,357	1,108	1,130	1,209	4033
of which: due and paid	711	1,510	2,298	681	624	660	1,331	1,108	1,129	1,209	4018
Short-term credit (net)	532	-57	452	-43	9	21	182	-74	-85	81	3
Credit extended (net)	-60	-14	11	1	6	-4	23	6	1	6	3
Credit received (net)	592	-43	441	-44	3	25	159	-80	-86	75	0
Other assets	-730	2,270	-2,700	-638	-156	474	-2,752	-847	-48	20	-2620
Other liabilities	-498	824	600	-1,350	-67	-112	-326	232	32	-3	182
Net errors and omissions	2,488	1,787	3,479	944	736	875	413	988	671	-6	2110
Overall balance	3,043	5,937	167	-563	-195	49	1,385	1,250	-510	122	-1285
Financing	-3,043	-5,937	-167	563	196	-49	-1,384	-1,250	510	-122	1285
Reserve assets (gross official reserves)	-3,044	-5,928	-158	566	199	-12	-1,374	-1,242	513	-119	1288
Credits from IMF, net	0	0	0	0	0	0	0		0	0	0
Exceptional financing	0	0	0	-3	-3	-37	-12	-8	0	-3	-3

Sources: Data provided by the Polish authorities.

1/ On basis of payments data from commercial banks.

2/ Foreign currency purchases in the kantor market that reflect current account transactions, as described in SM/95/310 and SM/95/316.

Table 30. Poland: External Trade, 1997–2001 1/
(Percentage change from a year earlier)

	1997	1998				1999				2000				2001			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Exports																	
Value (U.S. dollar)	5.4	14.7	11.5	11.0	2.3	-6.4	-6.9	-2.1	3.5	15.0	14.9	18.8	17.7	21.3	14.7	12.1	8.8
Volume	13.7	21.6	11.4	7.5	-2.9	-7.4	0.0	1.1									
Price (U.S. dollar)	-7.3	-5.7	0.1	3.3	4.2	1.3	-7.0	-6.7									
Imports																	
Value (U.S. dollar)	13.9	13.5	10.8	18.2	3.7	-6.0	-5.9	-4.1	5.8	13.0	11.7	4.3	-0.8	5.5	1.1	2.7	1.8
Volume	22.0	21.1	16.1	17.4	3.8	-2.2	1.0	3.0									
Price (U.S. dollar)	-6.6	-6.3	-4.7	0.6	-1.3	-3.9	-6.9	-8.4									
Terms-of-trade	-0.6	0.6	5.0	2.6	5.5	5.4	-0.1	1.9									

Source: Data provided by the Polish authorities; and Fund staff estimates.

1/ Customs basis: merchandise exports, excluding unrecorded trade.

Table 31. Poland: Direction of Trade by Commodity Group, January–December 2001
(Share, in percent; SITC classification)

	Percent of Total Trade	Central and Eastern European Countries		Developed Countries		Developing Countries
		Total	Of Which: CEFTA	Total	Of Which: EU	
Exports (f.o.b.)						
Food, live animals	7.4	2.4	0.9	4.1	3.6	0.9
Beverages, tobacco	0.4	0.1	0.0	0.2	0.1	0.1
Inedible crude materials	2.5	0.3	0.2	2.0	1.9	0.2
Mineral fuels	5.6	1.1	1.0	4.3	4.1	0.4
Oils, animal fats	0.1	0.1	0.0	0.0	0.0	0.0
Chemicals	6.3	2.6	1.0	3.1	2.8	0.6
Manufactures classified by material	23.9	5.3	2.6	17.3	16.1	1.3
Machinery, transport equipment	36.2	3.8	1.9	29.6	27.2	2.8
Miscellaneous manufactured articles	17.6	2.7	1.1	14.5	13.4	0.4
Other	0.0	0.0	0.0	0.0	0.0	0.1
Total	100.0	18.4	8.7	75.1	69.2	6.5
Imports (c.i.f.)						
Food, live animals	5.4	0.7	0.5	3.4	2.8	1.3
Beverages, tobacco	0.5	0.1	0.1	0.2	0.2	0.2
Inedible crude materials	3.1	0.8	0.2	1.6	1.2	0.7
Mineral fuels	10.1	8.7	0.5	1.1	1.0	0.3
Oils, animal fats	0.3	0.0	0.0	0.3	0.2	0.0
Chemicals	14.6	2.0	1.3	12.1	10.7	0.5
Manufactures classified by material	20.5	2.9	2.2	16.0	15.1	1.6
Machinery, transport equipment	36.5	2.3	2.1	28.9	24.7	5.3
Miscellaneous manufactured articles	8.8	0.6	0.5	6.2	5.4	2.0
Other	0.2	0.0	0.0	0.2	0.1	0.0
Total	100.0	18.1	7.4	70.0	61.4	11.9

Source: Data provided by the Polish authorities.

Table 32. Poland: Commodity Composition of Trade, 1997–2001
(SITC classification)

	1997	1998	1999	2000	2001
	(At current prices, in millions of U.S. dollars)				
Exports (f.o.b.)					
Food, live animals	3,026	2,840	2,328	2,366	2,669
Beverages, tobacco	103	96	102	120	140
Inedible crude materials	820	804	839	894	915
Mineral fuels	1,719	1,546	1,377	1,610	2,043
Oils, animal fats	43	38	46	23	18
Chemicals	2,027	1,899	1,695	2,151	2,278
Manufactures classified by material	6,830	7,116	6,986	7,856	8,614
Machinery, transport equipment	5,560	8,022	8,278	10,820	13,055
Miscellaneous manufactured articles	5,611	5,861	5,750	5,804	6,355
Other	13	7	6	7	5
Total	25,751	28,229	27,407	31,651	36,092
Imports (c.i.f.)					
Food, live animals	2,894	2,968	2,537	2,558	2,724
Beverages, tobacco	299	302	368	198	233
Inedible crude materials	1,762	1,655	1,419	1,643	1,578
Mineral fuels	3,710	2,964	3,281	5,297	5,081
Oils, animal fats	239	282	190	164	174
Chemicals	5,839	6,405	6,584	6,881	7,337
Manufactures classified by material	8,283	9,711	9,526	9,789	10,333
Machinery, transport equipment	15,228	18,273	17,544	18,114	18,324
Miscellaneous manufactured articles	3,950	4,412	4,380	4,218	4,416
Other	104	83	82	78	75
Total	42,307	47,054	45,911	48,940	50,275
	(In percent of total)				
Exports (f.o.b.)	11.8	10.1	8.5	7.5	7.4
Food, live animals	0.4	0.3	0.4	0.4	0.4
Beverages, tobacco	3.2	2.8	3.1	2.8	2.5
Inedible crude materials	6.7	5.5	5.0	5.1	5.7
Mineral fuels	0.2	0.1	0.2	0.1	0.0
Oils, animal fats	7.9	6.7	6.2	6.8	6.3
Chemicals	26.5	25.2	25.5	24.8	23.9
Manufactures classified by material	21.6	28.4	30.2	34.2	36.2
Machinery, transport equipment	21.8	20.8	21.0	18.3	17.6
Miscellaneous manufactured articles	0.1	0.0	0.0	0.0	0.0
Other					
Total	100.0	100.0	100.0	100.0	100.0
Imports (c.i.f.)	6.8	6.3	5.5	5.2	5.4
Food, live animals	0.7	0.6	0.8	0.4	0.5
Beverages, tobacco	4.2	3.5	3.1	3.4	3.1
Inedible crude materials	8.8	6.3	7.1	10.8	10.1
Mineral fuels	0.6	0.6	0.4	0.3	0.3
Oils, animal fats	13.8	13.6	14.3	14.1	14.6
Chemicals	19.6	20.6	20.7	20.0	20.6
Manufactures classified by material	36.0	38.8	38.2	37.0	36.4
Machinery, transport equipment	9.3	9.4	9.5	8.6	8.8
Miscellaneous manufactured articles	0.2	0.2	0.2	0.2	0.1
Other					
Total	100.0	100.0	100.0	100.0	100.0

Source: Data provided by the Polish authorities.

Table 33. Poland: Foreign Investment in Poland by Sector
Cumulative through June 2001
(In millions of U.S. dollars)

	Disbursements	Percent	Commitments	Percent
Manufacturing	20,238	41.8	4,308	43.1
Food, drinks, and tobacco products	5,380	11.1	518	5.2
Transportation equipment	5,307	11.0	305	3.0
Other nonmetal goods	2,756	5.7	806	8.1
Paper and printing services	1,559	3.2	376	3.8
Chemicals and chemical products	1,267	2.6	437	4.4
Electrical machinery and apparatus	1,582	3.3	381	3.8
Machinery and equipment	281	0.6	129	1.3
Other	2,106	4.3	1,348	13.5
Rubber and plastic	591	1.2	190	1.9
Metals and metal products	409	0.8	776	7.8
Furniture and consumer goods	459	0.9	288	2.9
Wood and wooden products	379	0.8	38	0.4
Fabrics and textile	253	0.5	55	0.6
Leather and leather products	16	0.0	1	0.0
Financial intermediation	11,117	23.0	700	7.0
Trade and repairs	4,629	9.6	723	7.2
Construction	2,678	5.5	959	9.6
Community social and personal services	1,622	3.3	594	5.9
Transportation, storage, and communication	5,605	11.6	529	5.3
Power, gas, and water supply	1,225	2.5	385	3.9
Hotels and restaurants	698	1.4	262	2.6
Real estate and business activities	492	1.0	1,521	15.2
Quarrying and mining	87	0.2	0	0.0
Agriculture, hunting, and forestry	40	0.1	13	0.1
Total	48,430	100.0	9,995	100.0
FDI below US$1 million	3,844			
Total FDI	52,274			

Source: Polish Agency For Foreign Investment.

Table 34. Poland: External Reserves and Other Foreign Assets, 1997–2001
(In millions of U.S. dollars)

At End of Period	1997	1998	1999	2000	2001
Official external reserves	21,403.2	28,275.0	27,313.7	27465.7	26565.2
Monetary gold 1/	262.4	950.0	959.4	901.5	914.7
Holdings of SDR	5.4	7.0	11.2	19.0	27.2
Reserve position in the IMF	104.2	108.5	236.0	224.8	461.8
Foreign exchange	21,031.2	27,209.5	26,107.1	26320.4	25161.5
Other foreign assets in convertible currencies	6,459.0	5,011.8	...	...	...
Other foreign assets of commerical banks	7,275.5	5405.3	7873.7	11323.3	15307.0

Sources: Data provided by the Polish authorities; and Fund's Treasurer's Department.
1/ Gold was valued at US$400 per ounce until December 1996; since 1997 gold was valued at market price.

Table 35. Poland: External Debt, 1997–2001
(In millions of U.S. dollars)

	1996	1997	1998	1999	2000				2001		
					Stock at the end of quarter:						
					Q1	Q2	Q3	Q4	Q1	Q2	Q3
Monetary authorities	265	791	925	1,844	669	409	394	436	370	252	396
Other investments											
Loans	265	791	925	1,844	669	409	394	436	370	252	396
Currency and Deposits	187	733	893	1,821	650	390	377	421	357	241	386
General government	36,271	34,402	34,098	32,121	33,412	33,314	32,383	32,980	33,526	32,139	32,777
Debt securities	7,562	7,818	7,037	6,922	9,093	9,015	9,147	9,231	10,729	9,937	9,799
Bonds and notes	6,884	7,343	6,672	6,777	8,877	8,874	8,986	9,073	10,599	9,761	9,572
Money-market instruments	678	475	365	145	216	141	161	158	130	176	227
Other investments	28,709	26,584	27,061	25,199	24,319	24,299	23,236	23,749	22,797	22,202	22,978
Loans	28,708	26,584	27,061	25,197	24,317	24,297	23,234	23,747	22,795	22,200	22,976
Other liabilities	1	0	0	2	2	2	2	2	2	2	2
Banks	2,518	3,683	5,131	6,548	6,139	6,318	6,170	6,122	6,032	6,452	6,821
Loans form direct investors	87	141	160	134	143	143	191	200	171	162	156
Debt securities	200	488	236	10	8	18	101	110	108	142	140
Bonds and notes	200	306	215	10	8	18	101	110	108	142	140
Money-market instruments	0	182	21	0	0	0	0	0	0	0	0
Other investments	2,231	3,054	4,735	6,404	5,988	6,157	5,878	5,812	5,753	6,148	6,525
Loans	488	1,104	2,084	3,681	3,517	3,455	3,346	3,595	3,355	3,491	3,871
Deposits with Polish banks	1,685	1,950	2,651	2,723	2,471	2,702	2,532	2,217	2,398	2,657	2,654
Other liabilities	58	0	0	0	0	0	0	0	0	0	0
Other sectors	8,487	10,771	17,588	24,884	25,476	26,834	26,652	29,959	30,808	30,918	31,787
Loans from direct investors	2,681	4,326	6,260	7,080	7,078	7,521	8,053	8,409	8,182	8,090	7,369
Debt securities	107	347	1,416	2,705	2,963	3,096	2,990	3,487	4,118	3,956	4,075
Bonds and notes	31	325	1,328	2,682	2,919	3,092	2,986	3,386	4,002	3,906	4,062
Money-market instruments	76	22	88	23	44	4	4	101	116	50	13
Other investments	5,699	6,098	9,912	15,099	15,435	16,217	15,609	18,063	18,508	18,872	20,343
Trade credits	2,197	1,862	2,125	5,225	5,444	5,630	4,962	5,572	5,703	5,792	5,552
Loans	3,502	4,236	7,787	9,758	9,895	10,428	10,365	12,269	12,700	12,922	14,604
Other liabilities	0	0	0	116	96	159	282	222	105	158	187
Total	47,541	49,647	57,742	65,397	65,696	66,875	65,599	69,497	70,736	69,761	71,781
Total long term	42,572	43,823	51,200	54,182	55,862	56,795	56,294	59,998	61,261	59,915	61,988
Total short term 1/	4,969	5,824	6,542	11,215	9,834	10,080	9,305	9,499	9,475	9,846	9,793

Source: Data provided by Polish authorities.
1/ Includes short-term loans, money market instruments, deposits with Polish banks, trade credits, and other liabilities.

Table 36. Poland: Scheduled External Debt Service by Creditor, 1997–2001 1/ 2/

	1997	1998	1999	2000	2001
Official creditors	897	962	981	1,093	3,770
Interest	645	624	534	530	489
Principal	252	338	447	563	3,281
Former CMEA and Russia	0	0	0	0	0
Interest	0	0	0	0	0
Principal	0	0	0	0	0
London Club/ Brady Bonds	328	284	257	1,246	482
Interest	328	284	257	303	225
Principal	0	0	0	943	257
Commercial banks	328	284	...	...	...
Interest	328	284	...	...	...
Principal	0	0	...	...	...
World Bank	170	306	288	298	295
Interest	108	99	99	92	88
Principal	62	207	189	206	207
International Monetary Fund	0	0	0	0	0
Charges	0	0	0	0	0
Repurchases	0	0	0	0	0
Other 3/	1,338	2,627	3,093	3,115	5,689
Interest	270	1,223	885	1,095	1,210
Principal	1,068	1,404	2,208	2,020	4,479
Total (including IMF)	2,733	4,179	4,623	5,752	10,236
Interest	1,351	2,230	1,779	2,020	2,012
Principal	1,382	1,949	2,844	3,732	8,224

Source: Data provided by the Polish authorities.

1/ Presented data on scheduled of external debt service by creditors is prepared on a cash basis b.o.p. and is not fully in compliance with categories included in external debt definition.

2/ Includes interest payments on short-term and long-term debt.

3/ Includes interest and principal payments obligations issued by government on international market.

Table 37. Poland: Servicing of External Debt, 1997–2001 1/

	1997	1998	1999	2000	2001 2/
	(In millions of U.S. dollars)				
Debt service payments due in respect to current period's obligations	2,733	4,179	4,623	5,752	10,236
Of which:					
Principal	1382	1949	2844	3732	8224
Interest	1351	2230	1779	2020	2012
Debt service paid in respect to current period's obligations	2,666	4,113	4,562	5,716	10,211
Of which:					
Principal	1320	1890	2792	3704	8208
Interest	1346	2223	1770	2012	2003
Debt service rescheduled 3/	67	66	61	36	25
Incurrence of new arrears	0	0	0	0	0
	(In percent of exports of goods and nonfactor services in convertible currencies)				
Debt service due in respect to current period's obligations	8.8	12.4	15.6	18.1	29.8
Debt service paid in respect of current period's obligations	8.6	12.2	15.4	18.0	29.7
Of which:					
Principal	4.3	5.6	9.4	11.7	23.9
Interest	4.3	6.6	6.0	6.3	5.8
Debt service rescheduled 3/	0.2	0.2	0.2	0.1	0.1
Incurrence of new arrears	0.0	0.0	0.0	0.0	0.0

Source: IMF staff compilation from data provided by the Polish authorities.
1/ Presented data on servicing of external debt is prepared by the NBP and is not fully in compliance with categories included in external debt definition.
2/ Preliminary data.
3/ Also includes capitalized, cancelled, and converted debt service.

Table 38. Poland: Summary of Nontariff Trade Restrictions, 2001

I. Imports

1. Licensing. Not required except for:

- Alcoholic beverages other than beer
- Military equipment
- Radioactive material
- Petroleum oils and oils obtained from bituminous minerals
- Tobacco products
- Natural gas and other gaseous hydrocarbons
- Goods for industrial assembly of motor vehicles
- Parts for industrial assembly of tractors used in agriculture and forestry

2. Preferential tariff quotas:

- Vehicle parts for assembly of new cars
- Wheat
- Barley
- Oats
- Vehicles:
  Without catalytic converter - 27,250
  With catalytic converter - 15,000
- Trucks: 170
- Electronic parts
- Several chemical products
- Some agricultural goods from CEFTA
- Equipment for environmental protection
- Some medical equipment
- Pharmaceuticals
- Military equipment
- Articles for electro-mechanical industry
- Some goods for telecommunications
- Some types of oil for ships
- Some commodities imported from Israel, Estonia, and the Shetland Islands
- Corn imported from Hungary
- Some components for production of food for people with non gluten diet
- Some seeds of sugar beets
- Hop-extract
- Some commodities for use in steel industry

3. Quantitative quotas:

- Synthetic fabrics from Taiwan
- Hard coal from Russia and the Czech Republic

4. Import prohibitions:

- Two-stroke engines and two-stroke motor vehicles
- Cars older than 10 years
- Tractors
- Motor vehicles for transportation of ten or more persons
- Special purpose motor vehicles
- Chassis fitted with engines and bodies more than three years old
- Trade with Iraq
  Meat, blood, flour, sausages, and animal glues from Portugal

II. Exports

1. Licensing. Not required except for:

- Radioactive materials
- Military equipment

2. Quotas. Not required except for:

- Polish exports subject to international agreement; e.g., textiles to the U.S. and Canada,
- Waste and scrap of copper, nickel, aluminum, lead, zinc and tin (20,000 tons, established December 1998)

3. Export prohibitions:

- Geese's eggs in shell: fresh, preserved or cooked
- Trade with Iraq (except food)
- Trade with Libya with respect to chemical catalyzers, pipes and tubes, steel chains, hydraulic and gas pumps, chemical installations and laboratory equipment, and automation equipment
- Oil and oil products to the Federal Republic of Yugoslavia

Source: Data provided by the Polish authorities.

Table 39. Poland: Protectionist Measures Introduced by the European Union, 1992–99

Product	Type of Measure	Status	Description	Introduction Date
Silicon	Dumping	Provisional duties	EU imposed provisional duties of 32 percent on imports of silicon after Commission determined that dumping at margins up to 61.5 percent had occurred.	07/06/1992
Frozen strawberries and black currants	Subsidies	Final ruling	EU Commission decided to impose countervailing duties in amount of the difference between Polish prices and EU minimum import prices on imports of frozen strawberries and black currants.	10/01/1992
Seamless steel tubes	Dumping	Preliminary ruling	EU imposed provisional antidumping duties on imports of seamless steel tubes (10.8 percent). They were imposed for four months pending an inquiry.	11/15/1992
Steel tubes	Dumping	Preliminary ruling	EU made preliminary affirmative determination in dumping case involving steel tubes.	11/15/1992
Hematite pig iron	Dumping	Investigation	EU initiated a dumping investigation of imports of hematite pig iron.	12/09/1992
Ferrosilicon	Dumping	Final ruling	EU council imposed definitive antidumping duties of 32 percent on imports of ferro silicon.	12/15/1992
Steel tubes	Dumping	Extension	EU extended for two months preliminary antidumping duties on imports of steel tubing.	03/08/1992
Frozen black currants, strawberries	Minimum prices	Amendment	EU amended a regulation imposing minimum prices on imports of frozen black currants and strawberries.	04/01/1992
Live animals and fresh meat	Import prohibition	Introduction	EU imposed import prohibition on animals and fresh meat because of cases of foot- and mouth disease in Italy.	05/10/1993
Urea	Dumping	Investigation	EU Commission initiated a dumping investigation of imports of urea.	05/13/1993
Urea ammonium nitrate	Dumping	Investigation	EU initiated a dumping investigation of imports of urea ammonium nitrate.	05/13/1993
Steel tubes	Dumping	Final ruling	EU imposed definitive antidumping duties on imports of steel tubes (10.8 percent), duties effective 5/15/93.	05/15/1993
Seamless pipes and tubes of iron and steel	Dumping	Final ruling	EU Commission imposed definitive antidumping duties (and there was a price undertaking) on imports of seamless pipes and tubes of iron and steel (11.7 percent).	05/15/1993
Cherries	Minimum price	Introduction	EU Council agreed to introduce minimum import prices on cherries.	07/19/1993
Silicon carbide	Dumping	Final ruling	EU imposed a duty of 8.3 percent.	04/13/1994
Pig iron (hematite)	Dumping	Final ruling	EU imposed on rate of duty to equalize the price to ECU 149 per ton.	07/16/1994
Urea ammonium nitrate solution	Dumping	Final ruling	EU imposed provisional duties to equalize the price to ECU 89 per ton (alternatively a specific duty of ECU 19 to 22 ECU per ton could be imposed).	07/01/1994
Zinc	Dumping	Investigation	EU Commission initiated a dumping investigation of imports of zinc.	06/09/1995
Wooden pallets	Dumping	Investigation	EU Commission initiated a dumping investigation on imports of wooden pallets.	07/13/1995
Zinc	Dumping	Final ruling	EU Commission imposed provisional (for six months) antidumping duties on imports of unwrought, unalloyed zinc (14.4 percent).	03/25/1997
Ferrosilicon	Dumping	Periodical review	EU Commission initiated periodical anti-dumping reviews on imports of ferro-silicon.	07/04/1997
Zinc	Dumping	Final ruling	EU Commission imposed antidumping duties on imports of unwrought, unalloyed zinc (10.6 percent) for those Polish producers which follow minimum price agreements.	09/22/1997
Seamless pipes and tubes of iron or non-alloy steel	Dumping	Final ruling	After periodical review, EU Commission imposed antidumping duties on imports of seamless pipes and tubes of iron or non-alloy steel (30.1 percent) for five years, except for imports under agreed volume and price quotas.	11/17/1997
Wooden pallets	Dumping	Final ruling	Minimum prices and antidumping duties (6.3 percent) on imports of flat wooden pallets; price agreement with Polish producers of so called 'wooden europallets'.	11/24/1997
Milk and milk products	Import prohibition	Introduction	EU imposed import prohibition on milk and milk products because of not meeting sanitary requirements by Polish dairy companies.	12/01/1997
String for sheaf-binders	Dumping	Investigation	EU Commission initiated a dumping investigation on imports of string for sheaf-binders.	01/02/1998
Hardboard	Dumping	Final ruling	EU commission imposed minimum prices and antidumping duties (7.0-34.8 percent) on imports of hardboard	01/29/1999
Polypropylene binder or baler twine	Dumping	Final ruling	EU commission imposed minimum prices and antidumping duties (6.1-20.3 percent) on imports of polypropylene binder	03/20/1999
Steel stranded ropes and cables	Dumping	Final ruling	EU commission imposed minimum prices and antidumping duties (27.9-48.3 percent) on imports of steel stranded ropes and cables	08/12/1999
Ammonium nitrate	Dumping	Investigation	EU Commission initiated a dumping investigation on imports of ammonium nitrate	10/29/1999
Ammonium nitrate solution	Dumping	Revision procedures	EU Commission initiated revision procedures for a dumping investigation on imports of ammonium nitrate solution	12/21/1999

Source: Data provided by the Polish authorities.

Table 40. Poland: Privatization 1997–2001
(Number of Firms)

	1997	1998	1999	2000	2001
Total number of remaining state-owned enterprises (SOEs)	3,369	2,906	2,599	2,268	2,054
Privatizations completed	2,940	3,226	3,459	3,671	3,767
Flow	347	286	233	212	96
Privatizations started	4,358	4,655	4,957	5,216	5,353
Flow	431	297	302	259	137
Direct privatization					
Completed	1,417	1,572	1,727	1,873	1,928
Started	1,564	1,699	1,847	2,012	2,086
Bankruptcy (Art. 19 of the SOE Law)					
Completed	678	768	820	860	869
Started	1,540	1,584	1,641	1,698	1,752
Capital privatization					
Indirect privatization	845	886	912	938	970
Commercialized	1,254	1,372	1,469	1,506	1,515
Of which: NIF program	512	512	512	512	512
Budget revenues from privatization (annual flows, in millions of zlotys)					
Total	6,538	7,069	13,347	26,746	6,557
In percent of GDP	1.4	1.3	2.2	3.9	0.9 1/
Of which:					
Leasing and asset sales	359	447	389	439	332
Capital privatization	3,254	5,102	12,949	26,740	6,422
Banks	2,925	1,518	n.a.	n.a.	n.a.

Sources: Central Statistical Office (GUS), Ministry of Treasury (formerly Ministry of Privatization), and Ministry of Finance.
1/ Includes revenues from privatization in local governments (66 million zlotys)

Table 41. Poland: Indicators of Banks' Health and Performance, 1997–2001 1/

		1997	1998	1999	2000	2001
Banks		83	83	77	73	69
Banks with majority state equity, of which		15	13	7	7	7
banks directly owned by the treasury		6	6	3	3	3
Private banks, of which:		68	70	70	66	62
banks with majority Polish equity		39	39	31	20	16
banks with majority foreign equity		29	31	39	46	46
Solvency						
Not at required level of 8 percent		8	8	9	7	3
Of which: Negative solvency ratio		6	5	0	1	1
Profitability						
Number of loss-making banks		9	12	9	13	11
Gross profit/income						
Total banks, of which:		14.7	7.1	6.2	4.6	2.6
Banks with major state equity, of which:		12.5	3.5	6.1	6.0	5.7
banks directly owned by the treasury		13.1	1.5	5.4	6.4	6.0
Private banks, of which:		17.3	9.9	6.3	4.4	2.0
with majority Polish capital		19.7	10.8	10.4	0.2	-0.4
with majority foreign capital		13.5	8.9	4.7	4.5	2.1
Non-performing loans (in percent of total portfolio)						
Substandard		3.9	4.0	5.3	4.5	4.9
Doubtful		1.2	2.0	3.6	5.4	5.0
Lost		5.4	4.9	4.8	5.6	8.4
Total		10.5	10.9	13.7	15.5	18.3
Loan loss provisioning (in percent of total loan portfolio according to categories)	**Required**	Actual				
Substandard	20.0	25.9	22.4	20.9	20.9	20.9
Doubtful	50.0	51.1	53.9	54.6	54.6	52.8
Lost	100.0	99.8	99.9	100.8	100.5	101.3
Total (in percent of requirement)		103.2	102.0	104.4	102.0	104.3
Memorandum item:						
Actual provisions in billions of zlotys		6.2	7.6	10.1	12.8	17.2

Source: Polish authorities.

1/ Excluding cooperative banks and banks in liquidation or bankruptcy.

Table 42. Poland: Key Banking Prudential and Deposit Insurance Regulations
(As of January 1, 2002)

Capital

- minimum capital: euro 5 million (about PLN 18 million)
- capital base at least equal to regulatory capital (sum of capital requirements for individual risks)
- minimum risk-based capital ratio: in general 8 percent, but 15 percent for newly started banks during the first year, and 12 percent during the second year of operation.

Loan loss provision

Five risk categories of loans:

- **standard** (past due between 0 and 30 days and good economic-financial position)
- **watch** (past due between 0 and 30 days and good economic-financial position, while bearing regional, country, product, client group, etc. risks)
- **substandard** (past due between 31 and 90 days or economic-financial position may affect timeliness of payment)
- **doubtful** (past due between 91 and 180 days or economic-financial position significantly deterorated, especially where losses affect capital with special treatment of project financing)
- **loss** (past due more than 180 days or economic-financial position unable the repayment)

Collateral not included in the classification criteria, but decrease the provisioning base.

The required and obligatory level of specific reserves as a percentage of provisioning base:

- Standard 1.5% (for consumer loans)
- Watch 1.5%
- Substandard 20%
- Doubtful 50%
- Loss 100% (equivalent of writing off)

Lending limits

1) Exposures against a client or group of connected clients may not exceed:

- 20 percent of capital base for connected clients,
- 25 percent of capital base for other clients.

2) Aggregate exposure against clients or groups of connected clients greater than 10 percent of capital base may not exceed 800 percent of capital base.

For banks that are subject to CAD regime, the above limits are allowed to be exceeded, however the excess is charged by additional 100% capital requirement.

3) Aggregate direct lending to bank directors, managers, and members of their statutory bodies is limited to 10 percent of capital base (25 percent in cooperative banks)

Capital concentration

Significant capital holdings in any entity are defined as holdings:

- greater than 10 percent of the entity capital base or bank capital base, or
- enabling the execution of at least 10 percent of voting rights or the execution of significant influence on the entity.

Capital concentration limits (excess charged by 100 percent of capital requirement):

- significant capital holding may not exceed 15 percent of bank capital base
- sum of significant capital holdings may not exceed 60 percent of bank capital base.

Market risk

CAD regime implemented. Banks are required to hold capital base no less than the sum of capital requirements for separate risks (credit risk plus market risks).

Internal models for calculating capital requirements for market risks are allowed under prior approval of the Commission for Banking Supervision.

Deposit Insurance

The banking guarantee scheme was established in 1995. The Act on Bank Guarantee Fund of December 14, 1994 established the Bank Guarantee Fund and the principles of the customer protection.

The guaranteed funds are:

- Full guarantee — funds up to the equivalent of 1,000 euro
- 90 percent guarantee — funds up to the equivalent 18,000 euro -- since January 1, 2002
  funds up to the equivalent 22,500 euro -- since January 1, 2003

Sources: National Bank of Poland and Bank Guarantee Fund.

INTERNATIONAL MONETARY FUND

REPUBLIC OF POLAND

Selected Issues

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Approved by European I Department

May 23, 2002

Contents Page

I. Whither Capital Flows After Privatization[1]

A. Introduction

1. **Since the mid-1990s, privatization-induced foreign direct investment (FDI) has been an important source of financing of Poland's sizable external current account deficits**. With most large utilities and enterprises that typically attract more foreign interest already sold-off, there is uncertainty about future flows. If the widening of the current account deficit in the last few years was indeed an endogenous response to higher capital inflows, then a gradual decline in the deficit could be expected and should not be problematic. But once the current account deficit widens from its current cyclical low, two outcomes are likely. At a minimum, the composition of capital inflows would shift to debt-creating inflows. More worryingly, total capital flows could decline sharply, forcing a disruptive correction of the current account deficit. The key point is that policymakers need to be more vigilant of external constraints in the coming years.

2. **This note assesses the prospects of future capital flows to Poland**. Section II briefly reviews the theory behind capital flows. Section III presents the stylized facts of recent capital flows to Poland. Section IV reviews the experience of other large scale privatizers. Section V looks at the empirical determinants of capital flows. Section VI concludes.

B. Analytical Considerations

3. Poland and the other Central and Eastern European (CEE) transition countries have benefited from large capital inflows in recent years. The theoretical work on capital flows suggest the following key motivations:

- **Capital stock adjustment**: Predictions from the law of diminishing returns in models of growth and trade suggests that capital flows to regions where it is more scarce and thus yields higher returns. On the basis of the large differences in capital stocks, Lipschitz, Lane and Mourmouras (2000) show that for rates of return on capital to be equalized between relatively capital abundant Germany and relatively capital poor CEE countries, capital flows of the order of 147 to 800 percent of GDP of the recipient country would be required, assuming flows take place in one period. For Poland, the estimate is 425 percent of GDP. The actual flows to Poland have been much lower, but the main message is that as long as large differences in capital stocks per worker exit between Poland and the EU countries, there is a strong incentive for further capital flows to Poland.

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[1] Prepared by Abebe Aemro Selassie.

- **Optimal portfolio considerations**: A necessary, though not sufficient condition, for efficient portfolio diversification is low correlation of returns among investment options. And since returns in a single country, even among different classes of assets, are likely to be more correlated with each other than with foreign assets, the variance of an investment portfolio can be reduced by investing abroad. As the objective is lower variance (or risk), foreign assets do not even have to provide higher rates of return to motivate capital flows. This suggests that there should always be some appetite for Polish risk.

- **Geography**: There is a substantial body of literature supporting the importance of geographical proximity for merchandise trade. Partly because of lower costs, countries tend to trade more with their neighbors. And to the extent that financial flows (and FDI in particular) follow trade, this can be expected to attract capital to countries like Poland from its main EU trading partners.

4. **In practice, the magnitude of capital flows has been much lower than predicted by theory**. Empirical studies for OECD countries suggest long period averages of national savings and domestic investment to be highly correlated (Feldstein and Horioka, 1980). While the degree of correlation has declined over time, and tends to be lower for developing countries, current accounts imbalances remain small relative to total savings and investment (Obstfeld and Rogoff, 2001). This conundrum has been attributed to factors generating significant differences in cross-border rates of return, including differences in human capital, capital market imperfections and transaction costs. Further, notwithstanding the predicted benefits of optimal international portfolio diversification, in practice investors predominantly prefer to hold domestic assets—the so-called home bias in equity portfolio (Tesar and Werner, 1998). Again, a number of factors ranging from transactions costs to information asymmetries have been advanced to explain away this puzzle. An important implication of all this is that the real world is much less globalized than traditional models suggest.

C. Stylized Facts of Recent Capital Flows

5. **Between 1996 and 2000, Poland attracted gross flows amounting to US$62 billion, or 39 percent of annual GDP** (Table 1).[2] Nondebt creating flows comprised about half of these inflows. Accordingly, Poland's net external debt increased by only US$13 billion despite a cumulative current account deficit of US$34 billion over the period.

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[2] Gross capital flows are the sum of FDI, portfolio flows, external borrowing at all maturities and errors and omissions. The latter amounted to US$11 billion over the period. In principle this entry could reflect unrecorded exports, but because the coverage of current transactions is generally more reliable than financial flows, they are considered as capital flows.

Table 1. Poland: Composition of capital Flows
(In millions of US dollars)

	1996	1997	1998	1999	2000	2001	1996-2000
Current account balance	-1,371	-4,312	-6,858	-11,569	-9,978	-7,010	34,088
in percent of GDP	-1.0	-3.0	-4.3	-7.5	-6.3	-4.0	
Capital and financial account balance	4,708	4,868	10,993	8,253	7,745	3,538	36,567
in percent of GDP	3.3	3.4	6.9	5.3	4.9	2.0	
Foreign direct investment (net)	2,741	3,041	4,966	6,348	8,168	6,497	25,264
of which:							
Privatization	400	900	1,100	2,200	5,100	1,900	9,700
in percent of GDP	0.3	0.6	0.7	1.4	3.2	1.1	
Non-privatization	2,341	2,141	3,866	4,148	3,068	4,597	15,564
in percent of GDP	1.6	1.5	2.4	2.7	1.9	2.6	
Portfolio investment (net)	241	2,098	1,330	1,449	2,769	1,996	7,887
in percent of GDP	0.2	1.5	0.8	0.9	1.8		
Other investment	1,726	-271	4,697	456	-3,192	-4,955	3,416
in percent of GDP	1.2	-0.2	3.0	0.3	-2.0	-2.8	
Polish assets	6,622	-782	2,285	-2,644	-2,864	-3,147	2,617
Drawings	-208	-416	-407	-251	-343	-328	
Repayments	181	274	309	253	494	333	
Other assets	6,649	-640	2,383	-2,646	-3,015	-3,152	
Polish liabilities	-4,896	511	2,412	3,100	-328	-1,808	
Drawings	1,416	2,390	3,569	5,339	5,278	5,849	17,992
Repayments	-7,272	-1,382	-1,946	-2,843	-3,764	-8,146	-17,207
Other liabilities	960	-497	789	604	-1,842	489	
Errors and omissions	486	2,487	1,801	3,484	2,907	2,980	11,165
Overall Balance	3,823	3,043	5,936	168	674	-492	13,644
Memorandum item:							
GDP, US$ millions	143,826	143,974	158,445	155,150	157,870	176,274	
Official Reserves, US$ millions	18,220	21,403	28,275	27,314	27,464	26,248	
Stock of External debt, US$ millions	47,541	49,648	59,163	64,852	67,517	...	
Net external debt, US$ millions	29,321	28,245	30,888	37,538	40,053	...	
Share of CA deficit covered by FDI, percent	200	71	72	55	82	93	
Share of CA deficit covered by priv, percent	29	21	16	19	51	27	

Source: Polish authorities.

6. **Privatization-related FDI accounted for a significant share of total capital inflows** (Table 1 and Figure 1).[3] Large scale privatization in Poland started fairly late, only generating significant proceeds from 1996. During 1996–98, the government sold assets worth US$2.4 billion to nonresidents. In 1999 alone such sales amounted to US$2.2 billion, rising sharply to US$5.1 billion in 2000 (partly due to a single large transaction—telecom), before dropping off in 2001. Of the cumulative US$15 billion in privatization proceeds raised by the government during 1996–2000, US$10 billion came from nonresident investors, corresponding to about 40 percent of the cumulative FDI flows. Beyond this, privatization is likely to have had spillover effects, encouraging both greenfield investments as well as other forms of capital inflows.

7. **While significant and having a higher FDI content, the volume of capital flows to Poland relative to GDP is less than in other advanced transition countries and emerging markets** (Table 2). Based on the most comprehensive aggregate (international investment position), Poland's gross external liabilities amounted to 57 percent of GDP as of 1999, well below the median of 71 percent of GDP for all transition economies.[4] Flow data from the WEO also confirm this. Cumulative total capital flows to Poland between 1991 and 1999 amounted to 13 percent of GDP, compared to a median of about 20 percent of GDP for transition countries and emerging market economies.[5] Both the stock and flow data also suggest a higher share of FDI in capital flows to Poland. An important explanatory factor for the lower volume of capital flows to Poland is the smaller magnitude of its current account deficits, relative to most developing countries during the period.

8. **The sustainability and composition of capital inflows depend on the nature of the factors supporting them**. In Poland, two factors stand out:

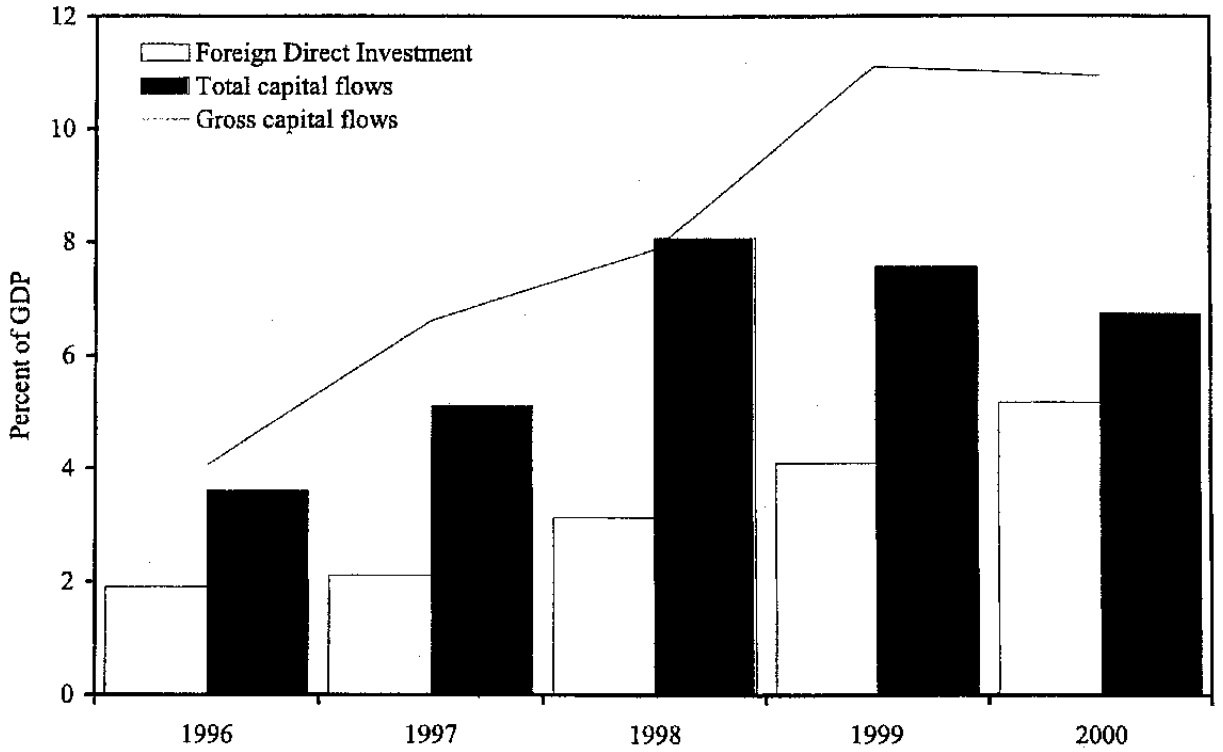
- **A significant share of capital flows to Poland in the late 1990s had a fiscal dimension.** Privatization inflows and government borrowing totaled some US$13½ billion, or 21 percent of gross capital flows between 1996 and 2000. The privatization proceeds were primarily used to improve the public debt profile, which also reduced the pressure on the central bank to sterilize capital flows. With the general government fiscal balance broadly unchanged as a ratio to GDP, and with the expenditure/GDP ratio trending downwards, public debt declined from 54 percent of

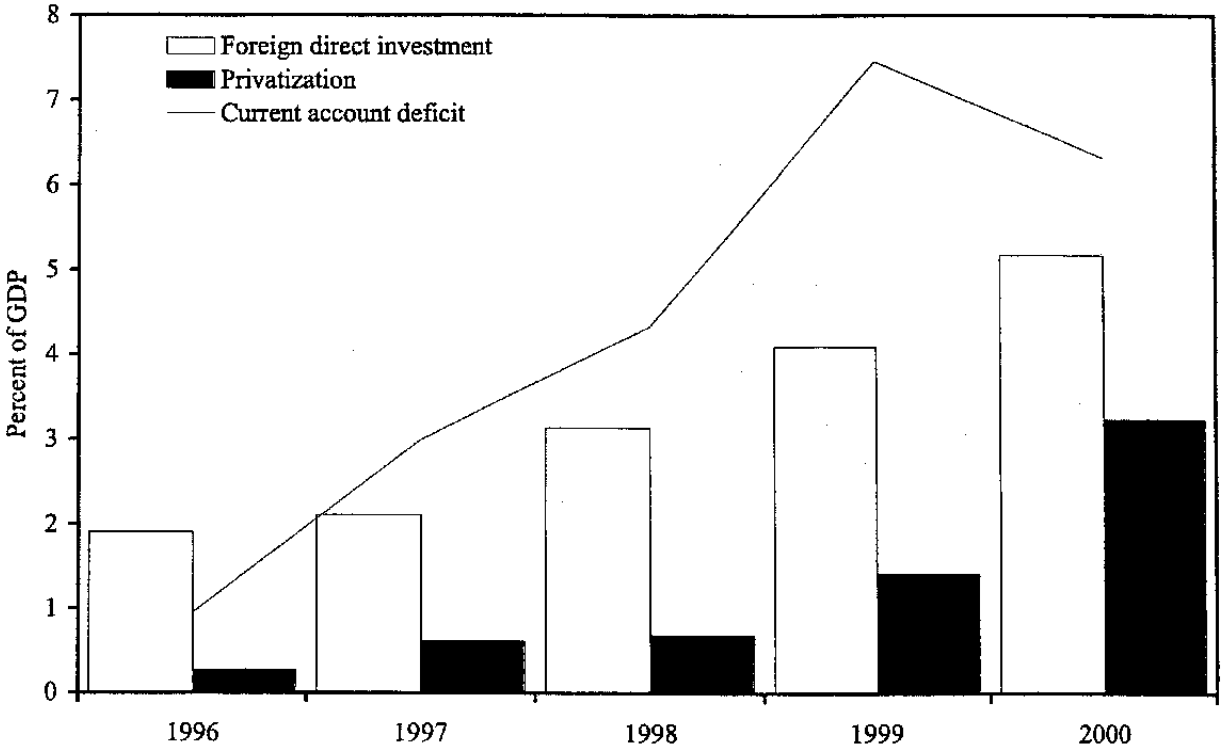
[3] Total capital flows are defined as the sum of the balance of the financial and capital account and errors and omissions.

[4] This is derived from IFS data on countries' international investment position (IIP), which is a direct measure of the external stocks and liabilities on the basis of survey data.

[5] World Bank data on privatization proceeds is only available through 1999. Accordingly, cross-country comparisons here are made using data through then.

Figure 1. Poland: FDI, Privatization and Other Capital Flows, 1996-2000 1/





Sources: Polish authorities and staff calculations.
1/ See text for definition.

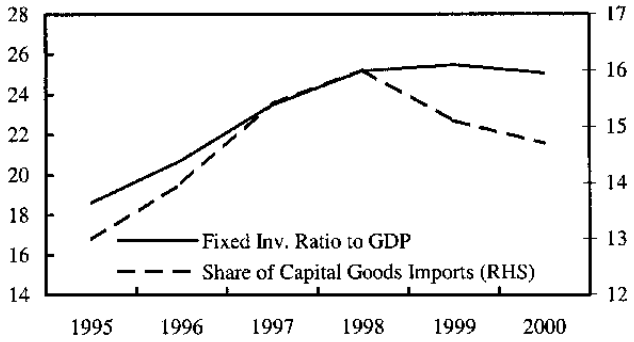
Table 2. Poland: Relative Performance in Attracting Capital Flows

	Data Source		
	International Investment Position in 1999 Stock	Cumulative Flows, 1991-99 Stock	Average, 1991-99 Flow
POLAND			
FDI/GDP	16.8	18.1	1.7
Total Capital Flows/GDP	56.7	13.0	1.0
FDI/Total Capital Flows	29.6	139.2	170.0
Median values:			
All developing countries			
FDI/GDP	19.2	17.8	2.3
Total Capital Flows/GDP	74.4	34.8	6.0
FDI/Total Capital Flows	25.8	51.1	38.3
Emerging Market Countries			
FDI/GDP	...	21.9	2.4
Total Capital Flows/GDP	...	34.7	8.0
FDI/Total Capital Flows		63.1	30.0
Transition Countries			
FDI/GDP	20.6	20.9	2.7
Total Capital Flows/GDP	71.2	56.4	6.1
FDI/Total Capital Flows	28.9	37.1	44.3
Memorandum item			
Czech Republic			
FDI/GDP	30.6	40.5	4.0
Total Capital Flows/GDP	75.4	59.2	5.7
FDI/Total Capital Flows	40.6	68.4	70.2
Estonia			
FDI/GDP	48.0	37.9	5.3
Total Capital Flows/GDP	101.7	63.8	7.7
FDI/Total Capital Flows	47.2	59.4	68.8
Hungary			
FDI/GDP	39.7	37.7	4.0
Total Capital Flows/GDP	103.2	48.0	5.0
FDI/Total Capital Flows	38.5	78.5	80.0
Slovakia			
FDI/GDP	16.2	15.2	1.9
Total Capital Flows/GDP	67.0	59.2	5.7
FDI/Total Capital Flows	24.2	25.7	33.3
Slovenia			
FDI/GDP	13.4	8.7	0.8
Total Capital Flows/GDP	49.3	21.7	1.9
FDI/Total Capital Flows	27.2	40.1	42.1

Sources: IFS, WEO, and staff calculations.

GDP at end-1995 to 39 percent at end-2000, almost entirely accounted for by a decline in external debt.[6]

- **Although it is difficult to infer causality, capital flows increased as private investment took-off**. Between 1996 and 2000, private fixed investment increased from 17 to 22 percent of GDP—among the highest in the OECD countries, but comparable to the other Central and Eastern European (CEE) countries (Table 3).[7] The strong correlation between investment and capital flows in Poland suggests that the widening of the current account deficit might have been at least partly endogenous. Indeed, through 1998, the increase in investment closely tracked the rise in the share of capital goods in imports (text Figure).



D. Other Large-Scale Privatizers: Chile, Mexico, and Hungary

9. **The discussion so far has thrown up a couple of reasons why the composition of capital flows might shift in the aftermath of privatization**. But the implications for the magnitude of capital flows is unclear. This section turns to look at the experience of other large-scale privatizers.

10. **Chile had two rounds of privatization**. The first round (1974–79) was generally unsuccessful, with most of the state assets sold to highly leveraged domestic investors. Coupled with poor macroeconomic policies, this resulted in a severe financial crises in 1981. The second round (1984–89) was more successful including because the government was able to attract more foreign investors.

11. **Privatization in Chile appears to have temporarily altered the composition of capital flows**. But the volume of total capital flows remained largely unaffected, and actually increased after the end of privatization. In the peak privatization years of 1986–89, the Chilean government cumulatively raised some 6 percent of GDP—about two-thirds of the total privatization proceeds generated by Poland during 1996–2000. Partly due to the rise in privatization proceeds, FDI in Chile also picked-up to average just under 4 percent of GDP

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[6] Debt write-off by Russia in the amount of US$2.3 billion (some 1½ percent of GDP) in 1996 also contributed to the decline in external debt.

[7] Note, however, that investment dropped off sharply in Poland in 2001.

Table 3. Poland: Savings and Investment Balance, 1996-2006

	1996	1997	1998	1999 Prel	2000 Est	2001 Proj
	in percent of GDP					
Consumption	79.7	79.8	79.0	80.0	78.2	78.8
Non-government	63.3	63.7	63.6	64.6	63.8	64.4
Government	16.4	16.0	15.4	15.4	14.4	14.4
Investment	21.9	24.6	26.2	26.4	26.3	22.5
Fixed capital	20.7	23.5	25.1	25.5	25.1	22.0
Non-government	16.8	19.3	21.0	21.7	21.9	19.0
Government	3.9	4.2	4.2	3.7	3.2	3.0
Inventories	1.1	1.1	1.0	0.9	1.2	0.5
Total Savings	21.9	24.6	26.2	26.4	26.3	22.5
Domestic Savings	20.9	21.6	21.9	18.9	19.9	18.5
Non-government	21.6	21.8	22.0	19.2	19.1	19.0
General Government	-0.6	-0.3	-0.1	-0.3	0.9	-0.6
Foreign Savings	1.0	3.0	4.3	7.5	6.3	4.0
Memorandum items:						
Real GDP growth	6.0	6.8	4.8	4.1	4.1	1.1
General government revenues	43.0	42.7	41.0	41.6	40.6	42.0
General government expenditures	46.4	45.8	44.3	44.4	42.7	46.9
Balance	-3.3	-3.2	-3.3	-2.7	-2.1	-4.9
Economic Balance 1/	...	...	...	-3.1	-2.5	-4.8
Net external debt 2/	13.6	12.8	13.7	16.1	16.6	13.2

Sources: Polish authorities and staff estimates.

1/ Commitment basis. See footnote on page for definition.

2/ Defined as external liabilities minus external assets, both exclusive of equity portfolio and direct investme

per year (Figure 2, top panel) during 1986–89. It declined sharply in the immediate aftermath of privatization (to 1.9 percent of GDP per year during 1990–94), but picked-up again strongly to average some 4½ percent per year during 1995–99, above the peak privatization years.[8] However, the fluctuations in FDI had little bearing on total capital flows, which increased in the aftermath of the peak privatization period, from 5 percent to 7½ percent of GDP per year. The current account deficit in Chile throughout this period was generally modest, and actually narrowed following the peak privatization.

12. **In Mexico, the process of restructuring state enterprises started in 1983, and privatization peaked during 1989–92.** The privatization program overlapped a period of rising current account deficits (Figure 2, middle panel), and the privatization proceeds made an important contribution to their financing.[9] However, not long after the end of privatization, the country was hit by a severe balance of payment crisis triggered by a reversal in portfolio and debt flows—from net inflows of US$23 billion in 1994 to net outflows of US$4½ billion the following year

13. **However, the Mexican crisis of 1994–95 cannot be solely attributed to the end of privatization program.** More important was poor macroeconomic management, which prompted the loss of confidence and led to capital outflows. Generally, privatization did not appear to have had a perceptible impact on either the magnitude or the composition of capital flows. Total capital flows were actually higher immediately after the peak privatization years (8 percent of GDP in 1993, up from 5¼ percent of GDP during 1989–92), and only declined in the run-up to the crisis (3½ percent of GDP in 1994). Further, the volume of FDI increased in the aftermath of privatization to an average of 2½ percent of GDP during 1993–99, compared to 1¼ percent of GDP during 1989–92. This stability in FDI, even as other forms of capital dried-up, partly reflected purchases at "fire sale" prices after the crisis (Krugman 1998).

14. **In Hungary, FDI declined after its peak privatization years (1995–97), but total capital flows actually increased.** Like Poland, Hungary disposed much of its state assets in a relatively short period (1995–97), partly with an eye to reducing the country's relatively high external debt burden. In these three years, privatization proceeds averaged more than 5 percent of GDP per year, falling back to less than 2 percent annually thereafter (Figure 2, lower panel). FDI, attracted by the privatization program, averaging some 6 percent of GDP per year made an important contribution to the financing of large current account deficits. After 1998, FDI in Hungary declined by half, albeit to a still healthy 3 percent of GDP. As in Chile, total capital flows actually increased in the aftermath of privatization.

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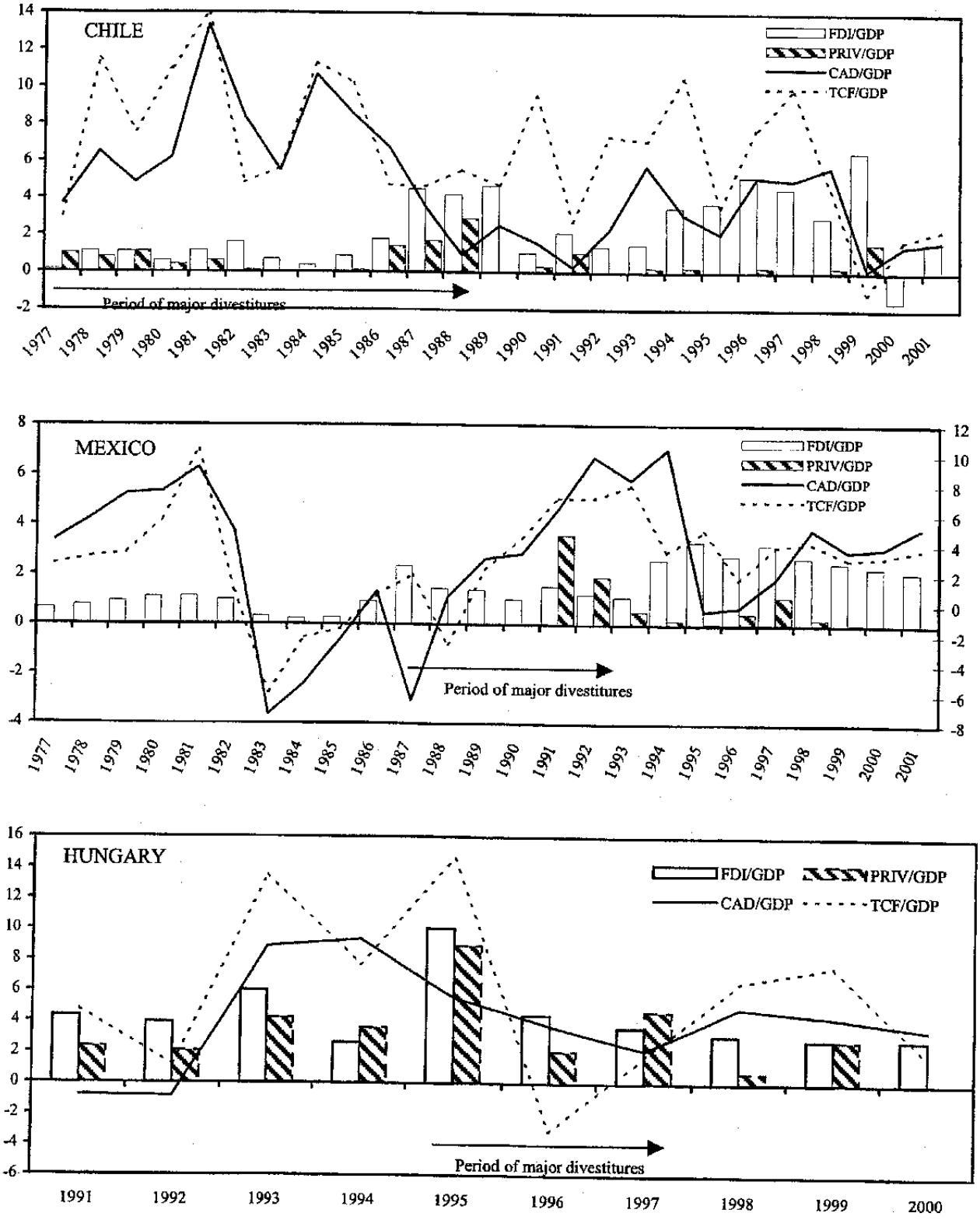
[8] The government was also disposing assets during this later period, albeit on a smaller scale.

[9] In 1991 and 1992 when privatization proceeds peaked, they exceeded total foreign direct investment, suggesting that some of the resources may have come from domestic sources.

Figure 2. Chile, Mexico, and Hungary: Capital Flows and Privatization



Sources: WEO and World Bank.

15. **In sum, where privatization has been substantial, it has attracted considerable foreign interest, and thus FDI.** In Chile and Hungary, the decline in FDI following the peak privatization was more than compensated by other inflows. However, in Mexico, not long after the end of the peak privatization period, capital inflows declined sharply prompting a sharp contraction in the current account. While not directly attributed to privatization, it could nonetheless be argued that the paucity of nondebt creating inflows contributed to the loss of confidence.

E. Determinants of Capital Flows and Their Composition

16. **Empirically, it has been difficult to establish the determinants of either the volume or composition of capital flows.** Typically, cross-section regressions have a very low explanatory power, and are not robust to specification changes. Nonetheless, some empirical regularities have emerged, as discussed below.

17. **The composition of capital flows matter because different types of flows have contrasting properties with regards to vulnerability, reversibility and liquidity** (Lane and Milesi-Ferretti, 2000) **and may also influence productivity growth** (Collins and Bosworth, 1999). Until recently, a broad consensus held that FDI type flows were preferable because they usually involved transfer of technology and skills, were less volatile and encouraged higher risk sharing than other financial instruments.[10] But others have now countered this claim. Hausmann and Fernández-Arias (2000) argue that a high share of FDI may actually reflect higher risk and poorly functioning debt and equity markets. As suggested by corporate finance literature, firms' preference for equity, as opposed to debt financing, may reflect the perception of the country's higher risk. Also, disorganized debt and equity markets "can make FDI a more efficient way to access capital." They support their case by pointing out that total capital flows tend to increase with the level of development, but the share of FDI in total flows declines with development. They emphasize that a higher share of FDI, while not undesirable in itself, may simply be a rational response to a deteriorating environment. Overall, they conclude that most of FDI's positive attributes also hold for other forms of capital flows.

18. **Empirical studies have typically explored the role of state variables (per capita GDP, country-size, degree of openness, financial market development, etc.) in explaining the sources of cross-country heterogeneity in total external liabilities and the share of FDI in these liabilities.** Use of stock versus flow data appears to have an important bearing on the findings, but there are at least two important empirical regularities that emerge from the studies in Lane and Milessi-Ferretti (1999), Hausmann and Fernández-Arias (2000) and Albuquerque (2001): (i) more open economies attract more capital (of all forms); and

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[10] For example, in the event of an external shock resulting in a real exchange rate depreciation, the burden of servicing debt flows would exert a counter-cyclical influence while FDI and equity would be pro-cyclical (Lane and Milesi-Ferretti, 2000).

(ii) privatization proceeds are positively associated with FDI flows. Beyond this, using flow data, Hausmann and Fernández-Arias (2000) find total capital flows to be positively correlated with per capita income. Lane and Milessi-Ferretti (1999) arrive at the same finding for industrial countries using stock data, but report a negative correlation for their developing country sample.

19. **Poland's proximity to the EU, its large market size and generally well-educated labor force are among the factors that can be expected to help attract FDI in the coming years.** But do these attributes matter in practice? A new set of equations were estimated on a large sample of countries (102) to assess the influence of these variables on the volume of FDI and total capital flows (see Annex for variable definitions and data sources). Controlling for per capita income, country size, the degree of openness and regional dummies (Tables 4 and 5), the results, although not conclusive, suggest:

- Openness is positively correlated with both the total flows and FDI, and in a statistically significant manner with the latter. This supports the complementarity between trade and capital flows, and suggests that openness to trade is very conducive to FDI flows.

- Country size (whether proxied by GDP, population or stock market capitalization) appears to be positively correlated with total capital flows, but negatively with FDI flows.[11] To the extent that FDI is motivated, at least partly, by the size of the domestic market, this finding seems counterintuitive.

- Per capita income is also found to be positively correlated with total capital flows, but negatively with FDI flows. This is in keeping with Hausmann and Fernández-Arias (2000) suggestion that FDI might be akin to an "inferior" good.

- Physical proximity to country's main export market matters both for total capital flows and, significantly (at the 10 percent level), with FDI. Coupled with the finding above that the domestic market size does not matter, this suggests that FDI may be motivated more by export considerations.

- The coefficient for labor force quality proxy (government expenditure on primary and secondary school education) are positive in 3 out of 4 equations, suggesting that the quality of the labor force has a bearing on the volume capital inflows.

- Finally, as expected, privatization has a significant positive impact on the volume of FDI flows.

[11] Only the results from the equation using GDP are reported in Tables 4 and 5.

Table 4. Equations Estimated Using Average of Flows for 1996-2000
Sample: Countries with GDP > US$5 billion in 1995
Dependent Variable: Total Capital Flows/GDP, average for 1996-2000 1/

	1	2	3	4	5	6	7
Explanatory variables:							
Control variables							
Openness	-0.005	0.165	0.020	0.004	0.024	0.022	0.016
	-0.350	1.037	1.612	0.260	1.341	1.270	0.989
Log GDP (country size)	0.617	1.432	1.575	0.116	2.488	2.344	1.445
	0.523	1.141	1.173	0.072	1.680	1.618	1.115
Per capita income	5.175	1.664	1.942	2.325	-0.837	-0.607	1.939
	3.892	0.985	1.113	1.237	-0.390	-0.290	1.097
Regional Dummies							
Sub-saharan Africa		0.087	0.313	0.083	-1.167	0.554	0.250
		0.031	0.115	0.031	-0.320	0.144	0.087
Asia		-4.057	-3.885	-2.936	-4.746	-4.525	-4.080
		-1.687	-1.599	-1.190	-1.805	-1.746	-1.585
Europe		6.601	8.442	7.945	7.236	7.875	6.204
		2.754	3.186	3.083	2.648	2.980	2.455
Middle East		-0.922	-0.753	-1.795	-1.927	-1.145	-1.039
		-0.429	-0.353	-0.817	-0.731	-0.442	-0.461
Transition		-2.090	-2.122	-2.149	-0.773	0.303	-1.869
		-0.893	-0.921	-0.868	-0.167	0.079	-0.763
Other Variables							
Financial development (Broad Money/GDP)			-0.008				
			-0.630				
Distance to main markets				-0.323			
				-0.328			
Gov expenditure on primary education					0.083		
					0.662		
Gov expenditure on secondary education						-0.011	
						-0.478	
Privatization							-0.035
							-0.223
Constant	-13.983	-4.077	-5.181	-0.901	1.838	2.276	-4.880
	-3.514	-0.779	-0.987	-0.082	0.289	0.348	-0.847
Adjusted R^2	0.208	0.310	0.327	0.356	0.290	0.289	0.297
Observations	98	98	92	93	76	77	96

Source: Staff Estimates.

1/ T-statistics below coefficient estimates.

Table 5. Equations Estimated Using Average of Flows for 1996-2000
Sample: Countries with GDP > US$ 5 billion in 1995
Dependent Variable: FDI/GDP, average for 1996-2000 1/

	1	2	3	4	5	6	7
Explanatory variables:							
Control variables							
Openness	0.015	0.021	0.018	0.014	0.024	0.023	0.022
	2.481	3.310	2.587	2.146	4.205	3.902	3.609
Log GDP (country size)	-0.470	-0.486	-0.687	-1.371	0.036	-0.123	-0.206
	-1.011	-0.966	-1.227	-2.209	0.076	-0.258	-0.420
Per capita income	0.339	-0.582	-0.494	-0.172	-1.302	-0.871	-0.241
	0.663	-0.868	-0.693	-0.239	-1.927	-1.300	-0.364
Regional Dummies							
Sub-saharan Africa		-3.212	-3.217	-3.022	-4.480	-4.561	-2.285
		-2.943	-2.893	-2.909	-3.922	-3.519	-2.110
Asia		-2.086	-2.025	-1.397	-2.604	-2.388	-1.756
		-2.205	-2.056	-1.489	-3.125	-2.865	-1.841
Europe		-0.245	0.159	-0.430	-0.606	-0.276	0.058
		-0.248	0.146	-0.418	-0.669	-0.313	0.059
Middle East		-2.762	-2.831	-2.963	-4.158	-3.865	-2.164
		-3.120	-3.117	-3.368	-4.813	-4.569	-2.480
Transition		-1.723	-1.641	-2.177	-1.591	-0.868	-2.285
		-1.848	-1.731	-2.275	-1.077	-0.691	-2.479
Other Variables							
Financial development (Broad Money/GDP)			0.004				
			0.648				
Distance to main markets				-0.680			
				-1.743			
Gov expenditure on primary education					0.070		
					1.804		
Gov expenditure on secondary education						0.010	
						1.148	
Privatization							0.167
							2.821
Constant	1.436	5.782	5.837	11.774	6.661	5.962	3.268
	0.999	2.804	2.733	2.752	3.320	2.874	1.531
Adjusted R^2	0.072	0.161	0.157	0.197	0.315	0.303	0.224
Observations	95	95	91	90	75	76	93

Source: Staff Estimates.

1/ T-statistics below coefficient estimates.

F. Concluding Remarks

20. **Relative to most other transition and emerging market countries, FDI flows to Poland in 1990s have been modest reflecting its smaller current account deficits.** But looking ahead, there are reasons to expect the current account deficit to increase from its current cyclical low. The discussion above suggests the country's large investment in human capital, its proximity to its main EU export markets, and pending EU accession should enable it to catch-up with the other emerging market countries and attract more FDI type flows.

21. **In any event, the end of major privatization in Poland need not lead to a decline in the volume of nondebt creating flows.** Chile, Mexico and Hungary continued to attract significant FDI even after their privatization program came to an end. Moreover, as the studies reviewed above suggest, attracting capital only in the form of FDI may be of dubious merit. What is ultimately important for Poland is its ability to attract all forms of capital to augment domestic savings.

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DATA SOURCES AND DEFINITION

Total capital flows	The balance of the financial and capital account plus errors and omissions scaled by GDP. Source, WEO.
FDI	Inward foreign direct scaled by GDP. Source, WEO.
Openness	Export plus imports of goods and services in 1995 scaled by GDP. Source, WEO.
Proxies for country size	
GDP	Log GDP in 1995. Source, WEO.
Population	Log population in 1995. Source, WEO.
Stock Market	Log stock market capitalization in 1995. Source, Emerging Stock Markets Factbook, 2000. Standards and Poors.
Per capita income	Log per capita income in 1995. Source, WEO.
Financial development	Broad money scaled by GDP in 1995. Source, WEO.
Distance to main markets	Log of distance by air to main export market. Sachs and Warner, 1997.
Primary education	Average ratio of real government current educational expenditure per pupil at primary school to real per capita GDP during 1960–1990. Source, Barro and Lee data set.
Secondary education	Average ratio of real government current educational expenditure per pupil at secondary school to real per capita GDP during 1960–1990. Source, Barro and Lee data set.
Privatization	Cumulative privatization proceeds scaled by GDP, 1995–99. Source, World Bank.

II. Foreign Currency Loans in Poland[1]

A. Introduction

1. **Just as in other emerging markets, foreign currency loans (FCL) have increased in Poland, reflecting both supply and demand factors.** On the supply side, Polish banks provide FCL as a profitable outlet for their FX deposits. At the beginning of 2001, the largest commercial bank in Poland (PKO BP) reported a margin of 2.7 percentage points on housing loans in zloty, compared with margins of about 4, 5, and 6 percentage points for loans denominated in U.S. dollars, euros, and Swiss francs, respectively.[2] On the demand side, borrowers have been attracted to FCL because of large nominal interest rate differentials between zloty and foreign currency loans—about 13 percentage points at the beginning of 2001 (text table). More recently, bank margins and interest rate differentials have declined, but still favor FCL. This differential coupled with the prospects of early EU accession and expectations of rising incomes and economic prosperity in Poland are also probably contributing to the popularity of FCL by reducing perceived exchange rate risk.

Interest Rates on Housing Loans

Currency	Feb. 2001	Apr.2002
Zloty	23.65	14.21
Dollar	10.98	6.45
Euro	10.84	7.9
Swiss Franc	10.8	8.21

Source: PKO BP web site. Rates are for a typical housing mortga with 20 percent down, and up to 25 years of maturity.

2. **This note reviews the development of FCL in Poland, drawing comparisons with other emerging market economies, and discusses challenges posed by these loans.** Poland is not an outlier in terms of the FCL when compared to other emerging market economies. Nonetheless, the large share of FCL to households raises some issues in Poland. A noteworthy feature of FCL in Poland is that the vast majority of loan contracts contain re-denomination clauses that allow borrowers to convert them into zloty loans. This option could help limit increases in debt service in the event of a depreciation of the zloty but could be challenging for banks in terms of asset-liability and currency management. From a macroeconomic perspective, a large and rapidly growing stock of FCL could hinder the ability of the National Bank of Poland to conduct independent monetary policy.

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[1] Prepared by Alexander Hoffmaister.

[2] The margins noted in the text correspond to the midpoints of the ranges used by PKO-BP to describe them. Specifically, the ranges are obtained by taking the midpoints and adding and subtracting 1.0 and 0.35 percentage points respectively for zloty and foreign currency loans.

B. Foreign Currency Loan in Emerging Markets and Poland

3. **Compared to other emerging market economies, FCL to the private sector in Poland are high, but not unusually so.** As a ratio of total loans to the private sector, FCL in Poland exceed those in Chile and Mexico, but are less than half of those in Argentina (text table). And, although also higher than those in Hungary and the Czech Republic, FCL relative to the size of the economy are comparable to those in the other Central and Eastern European (CEE) countries. This reflects, of course, the different degrees of financial intermediation in the CEE countries.

Foreign Currency Loans to Domestic Residents by Domestic Banks, in Percent.

	Date	FCL ratio	
		GDP	Private Credit
Poland	December, 2001	8.1	28.5
Hungary	May, 2001	8.8	27.2
Czech Rep	January, 2001	6.0	15.7
Israel	Average, 2001	26.5	25.3
Chile	March, 2001	9.8	13.8
Mexico	December, 2000	2.3	19.6
Argentina	February, 2001	14.3	62.6

Sources: Authorities, and Barajas and Morales (2002).

4. **In Poland, however, the share of FCL to households is large.** With cautious banking supervision and proper risk assessment, these loans could extend financial opportunities available to the economy. Also, FCL can provide banks a profitable manner to correct currency mis-match that may arise as FX deposits grow in popularity. Nonetheless, the expansion of FCL in Poland is such that about a third of all outstanding FCL are to households. This stylized fact is new, and has been rightly receiving significant attention because of the potential exposure of households to foreign exchange risk and of banks to both that and credit risk.

C. Foreign Currency Loans to Households

5. **The growth of FCL to households is a recent development** (text table). During 1999- 2001, their share in total bank lending to the private sector—including foreign exchange (FX) rate linked loans—tripled to 9.0, and doubled as a share of GDP to 2.5 percent.[3] As noted above, large interest rate differentials and the greater margins on FCL have contributed to these increases. In contrast, FCL to enterprises only increased by less than one percentage point to about 19½ percent of total bank loans, and relative to GDP

[3] For all practical purposes FX linked loans—loans that are denominated in FX but are disbursed and serviced in zloty at the prevailing exchange rate—are no different from FCL's. Data reporting limitations impede a sectoral breakdown of linked loans. Anecdotal information suggests that they are primarily for household mortgage and durable consumption loans. Although grouping them with other household FCL's could overstate FCL's to households—some small and medium size enterprises also borrow in the form of linked loans—it does not necessarily overstate the problem of unhedged FCL's. This is because it is unlikely that these enterprises differ significantly from households in their propensities to hedge against the FX risk.

by less than ½ percentage point to 5½ percent. These data, however, do not reflect FX borrowing by large enterprises abroad.

Foreign Currency Loans to Domestic Residents by Domestic Banks, 1999-2001 (end-of-period)

	1999	2000	2001
	(Percent of bank loans)		
Total foreign currency loans	21.7	23.7	28.5
Enterprises	18.6	18.8	19.4
Households	1.2	2.5	5.1
FX linked /1	1.9	2.3	4.0
	(Percent of GDP)		
Total foreign currency loans	5.8	6.6	8.1
Enterprises	4.9	5.2	5.5
Households	0.3	0.7	1.4
FX linked 1/	0.5	0.7	1.1

Source: National Bank of Poland.

/1 FX loans disbursed and serviced in zloty at the prevailing exchange rate.

6. **Increases of FCL to households raise several issues.** Households are not naturally hedged against the FX risk—their income streams are likely to be denominated in zloty and in all likelihood would increase less quickly than their debt servicing costs associated with a weakening currency. Moreover, it is unlikely that households hedge against the FX risk, as the cost of FX cover would offset, most if not all, of the interest rate differential.[4] In these circumstances a weakening of the zloty would tend to increase households' burden of servicing these liabilities. And if the weakening of the zloty is sharp and persistent, it could imperil household's ability to maintain regular payments, increasing the risk of credit default. It is quite possible, however, that the FX risks that households face will diminish over time because over the life of most of these loans households' incomes will be re-denominated in euros.[5]

Re-denomination Option of FCL to Households

7. **The option to re-denominate loan contracts could limit the burden of higher debt service on FCL associated with the impact of a weakening zloty.**[6] For a fee ranging between 0.5 to 1.5 percent of the loan principle, this widely available option allows borrowers to re-denominate their FCL as a zloty loan at the prevailing market interest rate and exchange rate. In effect, this option provides households a "safety-valve" that limits the increase in debt service, particularly for those that correctly anticipate major exchange rate movements and exercise this option before any large weakening of the zloty occurred. In any

[4] Domestic interest rates reflect covered interest rate parity. In other words, an efficiently functioning market will limit the interest rate differential to the sum of the expected depreciation plus a premium reflecting the country risk. However, interest differentials (or equivalently forward discounts on the zloty) have not in the short-term been good predictors of actual exchange rate changes.

[5] Clearly, this will depend on the rate at which the zloty will be set irrevocably to the euro.

[6] This option could provide a perverse incentive to households: they are less likely to hedge against the FX risk if they perceive it as a protection against the risk.

event, this option can only limit the increase in debt service: domestic interest rates will likely be higher because of the expected depreciation and country risk, and amortization will be higher reflecting the weakening of the zloty.

8. **The extent to which households would, in the event of a zloty weakening, re-denominate FCL and the degree to which this option would limit increases in debt service are open questions.** Since banks restrict the frequency that households can re-denominate FCL, currency weakness that is viewed, as short term will not necessarily prompt households to re-denominate. For exercising this option, households will need to be convinced of a persistent depreciating trend. The difficulties of determining the persistence of this trend in real time, and the cost of mistakenly switching into zloty loans will likely lead to a slow exit out of FCL, at first only by the most risk averse households. As the weakness persists, more and more households—with progressively less risk aversion—would be expected to re-denominate their FCL. This will continue until either the stock of FCL is exhausted, or the remaining households no longer perceive that the benefits of re-denominating loans exceed the cost of servicing FCL.

9. **The magnitude and the speed of currency depreciation could determine the exit rate.** In a hypothetical case of an all-out exchange rate crisis, households are likely to exit quickly and in mass. But the "relief" offered by the re-denomination may still imply significant increases in repayment both because of higher zloty interest rates—hiked to defend the currency—as well as higher amortization because of a weaker zloty.[7] In these circumstances, unless household income streams adjusted quickly to the weakening of the zloty, household debt servicing ability could be impaired despite the re-denomination clause. In less trying times, households that correctly anticipate the persistence of a weak currency would benefit the most, and face smaller increases in debt service.

Re-denomination Option of FCL and Banks

10. **A massive household move out of FCL would shift the foreign exchange risk to the banks.** As in other countries, supervisory authorities in Poland require banks to limit their FX open position in order to minimize the impact of currency movements on their balance sheets. Nonetheless, as in other countries, Polish banks face counterpart exposure to the extent that the domestic value of the collateral backing FX loans may not increase in line with the weakening of the zloty, particularly following an economy-wide shock.[8] In Poland,

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[7] The interest on a typical FX and linked housing loan is adjusted monthly and on a quarterly basis for zloty loans. Thus, it is conceivable that as the hypothetical crisis subsided, interest rates on zloty loans would fall, and the increase in household debt service would be tempered. Moreover, as inflation begins to reflect the exchange rate pass-through the real value of amortization will tend to fall as well.

[8] Counterpart exposure also results when an FX borrower's cash-flow is predominantly in domestic currency. See Sundararajan, et al, "Financial Soundness Indicators: Analytical Aspects and Country Practices, IMF Occasional Paper. No. 212, 2002.

however, this exposure is compounded by the potential of a currency mis-match in the banks' balance sheets that could result from a massive exercise of the re-denomination option. It is conceivable that banks may have sought derivative arrangements to deal with this eventuality, although given the typical maturity of the housing loans this may have proven to be difficult. In any event, banks must therefore price the risk associated with re-denomination into FX loans with the re-denomination option, for example in the fees for securing the loan-cum-option.

11. **Closing banks' FX positions under stress following a large-scale re-denomination could be costly.** In a period of exchange rate turbulence, it may be virtually impossible, at any price, to find agents willing to hold the other side of the market and carry a FX liability on their books. Banks could seek alternative FX assets, such as foreign securities and deposits abroad. But, as the interest accrued from these alternative assets is likely to be lower than FX loans, banks could conceivably seek to reduce their FX liabilities—passively by increasing zloty deposit rates, reducing FX deposit rates, and not renewing FX time deposits, or actively by requesting customers to close out their deposits. In this case, the banking system could lose deposits to financial institutions abroad.

Foreign Currency Loans and their Implication For Monetary Policy

12. **Aside from banking issues, a large and growing stock of FCL could hamper the central bank's ability to conduct independent monetary policy.** Both the credit and exchange rate channels would be constrained. The credit channel—associated with the NBP's ability to affect the cost of capital—is likely to weaken with the increase in the economy's reliance on FCL. Generally, as the incentive to switch to FCL increases with the interest rate differential, wide-spread resort to FCL would constrain the effectiveness of the credit channel through which higher interest rates influence demand.

13. **The exchange rate channel—the effects of changes in zloty interest rates on the economy through the exchange rate—could also be impaired.** As more households liabilities are denominated in FX, movements in the exchange rate could have large adverse effects on the balance sheets of households and in turn on those of banks. Indeed, in many countries where trend increases in household FX liabilities were left unattended, monetary policy decisions became hostage to balance sheet considerations.

D. Concluding Remarks

14. **The prospects of early EU and adoption of the euro, coupled with large interest rate differentials, have encouraged foreign currency borrowing in Poland.** With vigilant banking supervision and prudent risk accounting, FCL can increase the financial opportunities available to economic agents without overly burdening the balance of risks in the economy. Also, FCL provide an important counterpart asset for banks' FX deposits. It is also quite possible that over the life of FCL, especially housing mortgages, households could see their incomes "re-denominated" in euros, thus gaining a natural hedge against the FX risk. Moreover, increases in unhedged FCL are likely to be less of a concern as the increase in household FCL would be expected to moderate with recent significant declines in interest rate differentials.

15. **In the meantime, however, it is critical to exercise vigilance.** In particular, bank supervisors should be able to identify, at an early stage, the potential FX and credit risks associated with a large stock of FCL. The development of stress testing methods underway by bank supervisors in Poland can aid in monitoring FX exposures and in gauging their impact on the banking sector under trying circumstances. These efforts, together with the establishment of a working group at the NBP to closely monitor FCL, should enhance risk management.

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III. Poland's Inflation Targeting Performance: A Peer Group Perspective[1]

A. Introduction

1. **Poland formally adopted inflation targeting (IT) in 1999 to anchor its monetary policy.** Despite successful disinflation, the targets were missed every year, in one or the other direction, reflecting a combination of exogenous shocks, technical factors, and issues related to macroeconomic policy mix and flexibility. Poland's experience is not unique. Many other countries with IT frameworks also had difficulty meeting their inflation targets and faced broadly similar policy challenges and conflicts. However, many of these countries exercised considerable policy flexibility and responded quickly to exogenous shocks, while still disinflating successfully.

2. **This chapter discusses Poland's experience with IT**. Section II reviews the Polish experience, drawing comparisons with a peer group of developing and emerging market economies that also adopted IT in the 1990s. Section III discusses macroeconomic policy challenges and technical issues in connection with IT in Poland and in its peer group. Section IV presents some concluding remarks.

B. Poland's Inflation Targeting Peers

Who are the Peers?

3. **Since 1990 some 60 developing, transition, and industrial countries target inflation, in one form or another** (Table 1). A smaller group, some 20, follows "strict" inflation targets, although not all of them would consider themselves formally operating IT regimes (Mishkin and Schmidt-Hebbel, 2001). Of these, half are industrial countries, and the bulk of the remainder, including Poland, have only limited experience with IT. Thus, Poland's IT peers—low to middle income countries in broadly similar economic circumstances—are small in terms of numbers (8) and have a relatively short experience operating targets (7 years on average).[2]

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[1] Prepared by Alexandros Mourmouras.

[2] Poland's peer group comprises the Czech Republic, Chile, Colombia, Peru, Mexico, Brazil, Israel and Korea.

Table 1. Poland: Central Banks Using Explicit Inflation Targets Since 1990
(With dates they were adopted and replaced)

Developing	Transitional	Industrialized
Malaysia (70s-)	Poland (92-)	New Zealand (88-)
Tanzania (80s-)	Albania (93-)	Greece (90?-)
Mozambique (87-)	Macedonia (93-)	Taiwan (90?)
Chile (91-)	Russia (93-)	Canada (91-)
Colombia (91-)	Slovakia (93-)	Israel (91-)
Egypt (91-)	Croatia (94-)	UK (92-)
India (91-)	Armenia (95-)	Australia (93-)
Uganda (92-)	Moldova (96-)	Finland (93-98)
Indonesia (92-)	Georgia (96-)	Sweden (93-)
Guyana (93-)	Kazakhstan (97-)	France (94-98)
Nigeria (93-)	Krygyz Republic (96-)	Italy (95-98)
Vietnam (93-)	Mongolia (97-)	Spain (94-98)
Bangladesh (94)	Romania (97-)	Korea (98-)
Ecuador (94)	Slovenia (97-)	Switzerland (00-)
Mexico (94-)	Turkmenistan (97-)	Iceland (01-)
Peru (94-)	Czech Republic (98-)	**Total 15**
Uruguay (95-)	**Total 16**	
Zambia (95-)		
Jamaica (96-)	*Of which, defined as:*	*Of which, defined as*
Mauritius (96-)	Strict inflation targets	Strict inflation targets
Sierra Leone (96)	Czech Republic (98-)	New Zealand (88-)
W. African States (97-)	Poland (98-)	Canada (93-)
China (98-)	**Total 2**	Israel (91-)
Kenya (98?)		UK (93-)
Lebanon (98-)		Australia (93-)
Turkey (98-)		Finland (93-98)
Brazil (98-)		Sweden (93-)
South Africa (00-)		Spain (94-98)
Indonesia (00-)		Korea (98-)
Thailand (00-)		Switzerland (00-)
Total 30		Iceland (01-)
		Total 11
Of which, defined as:		
Strict inflation targets		
Chile (91-)		
Brazil (98-)		
Colombia (91-)		
Mexico (99-)		
Peru (94-)		
Brazil (98-)		
South Africa (00-)		
Indonesia (00-)		
Total 8		

Source: Bank of England.

The Environment for Inflation Targeting

4. **Poland has been operating an IT regime under difficult external circumstances.** In the late 1990s, Poland faced volatile export market growth, significant terms of trade shocks, and large external current account deficits, partly related to the 1998 Russia crisis (text Table1). In response to the external crisis, monetary policy was eased and exports were gradually (and successfully) reoriented. The economy rebounded strongly. But after current account deficits ballooned and inflation surged in mid-2000, monetary conditions were tightened just as key western export markets began to weaken. Domestic activity slowed down substantially in 2001 and the fiscal position weakened as revenue slackened and expenditure increased in an election year. The monetary stance also eased from early 2001 as inflation decelerated sharply.

Text Table 1. Poland: Selected Indicators, 1997–2001

	1997	1998	1999	2000	2001
Dom. Demand growth	9.4	6.5	5.0	1.8	-1.7
Export Mkt. Growth	10.2	6.5	4.4	12.5	2.7
Ch. in terms of trade	1.8	3.2	1.7	-4.2	1.7
Current account balance	-3.0	-4.3	-7.5	-6.3	-4.0

Text Table 2. Peer Group: Selected Economic Indicators, 1997-99

	1997	1998	1999
Czech Republic			
Export Mkt. Growth	12.4	9.9	5.2
Terms of trade	2.6	4.3	-1.0
Current account balance	-6.1	-2.3	-2.9
Chile			
Export Mkt. Growth	11.2	4.3	6.6
Terms of trade	3.0	-6.3	-1.9
Current account balance	-5.0	-5.2	-0.1
Colombia			
Export Mkt. Growth	15.5	9.7	5.0
Terms of trade	24.7	-8.0	7.8
Current account balance	-5.5	-5.3	0.2
Peru			
Export Mkt. Growth	12.4	7.4	7.0
Terms of trade	4.6	-10.7	-5.4
Current account balance	-5.2	-6.4	-3.8
Brazil			
Export Mkt. Growth	14.4	6.4	3.4
Terms of trade	0.3	1.4	-0.7
Current account balance	-3.8	-4.2	-4.8
Korea	**1996**	**1997**	**1998**
Export Mkt. Growth	9.3	10.1	2.5
Terms of trade	-5.2	-6.9	-2.4
Current account balance	-4.4	-1.7	12.6

5. **Poland's peer group had a broadly similar experience.** Most importantly, they also experienced shrinking export markets, terms of trade losses, and sizable external current account deficits (Table 2 and text Table 2). In fact, Poland's terms of trade losses were mild compared to those of Peru, Brazil and Korea. (Colombia experienced considerably greater volatility). Second, Poland's peers also experienced sharp decelerations in domestic demand and GDP growth (text Table 3), in some cases followed by rapid bounce-backs. Third, like Poland, these countries disinflated successfully and secured rapid reductions in their external current account deficits (except Brazil).

Text Table 3. Peer Group: Domestic Demand and GDP Growth, 1997-99

	1997	1998	1999
Czech Republic			
Domestic demand growth	-0.7	-2.1	-0.5
GDP growth	-0.8	-1.2	-0.4
Chile			
Domestic demand growth	9.1	3.9	-10.0
GDP growth	8.2	4.3	-3.1
Colombia			
Domestic demand. Growth	4.0	-1.3	-9.2
GDP growth	3.4	0.6	-4.1
Peru			
Domestic demand. Growth	6.9	-0.8	-3.1
GDP growth	6.7	-0.5	0.9
Brazil			
Domestic demand. Growth	3.9	0.0	-1.8
GDP growth	3.3	0.2	0.5
Korea	**1996**	**1997**	**1998**
Domestic demand. Growth	7.8	-0.8	-19.6
GDP growth	6.8	5.0	-6.7

Table 2. Poland and Peer Countries: Environment for Inflation Targeting, 1992-2001

		1992	1992	1994	1995	1996	1997	1998	1999	2000	2001
BRAZIL	Current account balance / GDP	1.6	-0.1	-0.3	-2.6	-3.0	-3.8	-4.2	-4.8	-4.1	-4.6
	Change in terms of trade (percent)	-0.3	2.1	-0.5	-0.8	-2.2	0.3	1.4	-0.7	-3.6	0.5
	Export market growth	17.7	5.6	12.9	13.2	9.2	14.4	6.4	3.4	10.1	11.1
	Domestic demand growth	-1.3	5.5	6.8	6.4	3.0	4.0	-0.1	-1.3	4.5	0.5
	GDP growth	-0.5	4.9	5.9	4.2	2.6	3.3	0.2	0.8	4.4	1.5
	General government balance /GDP	-2.2	0.3	-3.3	-7.0	-5.9	-6.1	-7.9	-10.0	-4.5	-5.2
CHILE	Current account balance / GDP	-2.1	-5.2	-2.8	-1.9	-4.6	-4.5	-5.2	-0.1	-1.3	-1.4
	Change in terms of trade (percent)	-3.5	-4.5	13.5	14.3	-11.7	3.0	-6.3	-1.9	-0.8	-4.0
	Export market growth	9.7	7.2	15.0	11.2	7.7	11.2	4.3	6.6	12.7	12.7
	Domestic demand growth	13.4	8.2	6.8	11.3	8.5	7.6	3.6	-4.7	3.9	2.7
	GDP growth	12.3	7.0	5.7	10.8	7.4	6.6	3.2	-1.0	4.4	2.8
	General government balance /GDP	2.8	1.7	1.5	3.3	2.4	1.9	-0.1	-2.2	-0.9	-0.9
COLOMBIA	Current account balance / GDP	1.8	-4.0	-4.5	-5.0	-4.9	-5.5	-5.3	0.2	0.4	-2.6
	Change in terms of trade (percent)	-5.8	-0.9	2.5	12.3	7.2	24.7	-8.0	7.8	9.7	-9.1
	Export market growth	7.2	4.9	10.2	13.1	4.2	15.5	9.7	5.0	12.7	13.7
	Domestic demand growth	4.9	9.5	7.9	5.8	1.1	4.0	-1.3	-9.2	2.8	3.1
	GDP growth	4.0	5.4	5.8	5.2	2.1	3.4	0.6	-4.1	2.8	1.5
	General government balance /GDP	-0.8	0.4	-0.7	-0.9	-2.3	-3.0	-3.8	-5.7	-4.5	-4.0
CZECH REPUBLIC	Current account balance / GDP	2.1	1.3	-1.9	-2.6	-7.4	-6.1	-2.4	-2.9	-5.6	-4.7
	Change in terms of trade (percent)	15.0	6.0	5.5	1.7	-1.5	2.6	4.2	-0.9	-3.8	0.1
	Export market growth	9.2	-1.6	7.1	9.1	7.7	12.4	9.9	5.3	11.4	12.4
	Domestic demand growth	4.7	2.2	8.4	8.4	7.3	-0.7	-3.0	-0.3	3.6	5.6
	GDP growth	-0.5	0.1	2.2	5.9	4.3	-0.8	-1.2	-0.4	2.9	3.6
	General government balance /GDP	-2.1	2.6	-1.9	-1.4	-0.9	-1.6	-1.4	-3.1	-4.4	-5.5
ISRAEL	Current account balance / GDP	0.2	-3.9	-4.5	-5.8	-5.5	-3.9	-1.4	-3.0	-1.2	-1.5
	Change in terms of trade (percent)	0.9	2.8	2.2	-1.5	2.3	-0.6	1.3	0.7	-2.6	-5.4
	Export market growth	7.5	6.6	12.2	11.0	7.5	11.4	6.6	9.1	13.6	14.6
	Domestic demand growth	5.9	5.9	8.3	6.4	5.7	2.0	1.2	4.9	3.4	1.5
	GDP growth	7.0	3.7	8.6	6.8	4.5	3.3	2.7	2.6	6.4	-0.6
	General government balance /GDP	-4.8	-4.4	-3.2	-4.5	-5.8	-4.3	-3.8	-4.8	-2.2	-3.8
KOREA	Current account balance / GDP	-1.3	0.3	-1.0	-1.7	-4.4	-1.7	12.7	6.0	2.7	2.0
	Change in terms of trade (percent)	-0.2	0.7	0.3	-2.6	-5.2	-6.9	-2.4	-3.6	-10.4	-5.1
	Export market growth	10.4	12.5	12.1	14.9	9.3	10.1	2.5	7.2	15.6	16.6
	Domestic demand growth	3.2	4.6	9.6	9.3	7.8	-0.8	-19.6	14.5	8.1	1.9
	GDP growth	5.4	5.5	8.3	8.9	6.8	5.0	-6.7	10.9	9.3	3.0
	General government balance /GDP	0.1	1.3	1.0	1.3	1.0	-0.9	-3.8	-2.7	2.7	2.9
MEXICO	Current account balance / GDP	-6.7	-5.8	-7.0	-0.6	-0.7	-1.9	-3.8	-2.9	-3.1	-2.8
	Change in terms of trade (percent)	-0.8	3.6	5.6	5.1	-0.3	-7.4	-6.9	4.0	-1.9	-2.3
	Export market growth	9.9	9.5	13.8	10.1	8.9	14.9	11.9	12.6	13.3	14.3
	Domestic demand growth	6.0	1.1	5.6	-14.0	5.6	9.6	6.2	4.1	8.4	0.4
	GDP growth	3.6	2.0	4.4	-6.2	5.2	6.8	5.0	3.6	6.6	-0.3
	General government balance /GDP	1.5	0.7	-0.2	-0.2	-11.2	-6.9	-8.3	-7.2	-3.7	-3.8
PERU	Current account balance / GDP	-6.0	-6.6	-5.9	-8.1	-6.5	-5.2	-6.4	-3.8	-3.1	-2.0
	Change in terms of trade (percent)	-4.0	-3.2	6.6	6.0	-3.4	4.6	-10.7	-5.4	-0.1	5.4
	Export market growth	8.4	8.6	12.1	13.3	7.7	12.4	7.4	7.9	13.3	14.3
	Domestic demand growth	0.2	4.8	14.0	11.8	1.3	6.9	-0.8	-3.1	2.4	-0.3
	GDP growth	-0.4	4.8	12.8	8.6	2.5	6.7	-0.5	0.9	3.1	0.2
	General government balance /GDP	-3.9	-3.4	-3.1	-3.0	-1.1	-0.4	-0.6	-3.1	-2.6	-2.7
POLAND	Current account balance / GDP	-1.8	-3.3	0.7	4.2	-1.0	-3.0	-4.3	-7.5	-6.3	-4.0
	Change in terms of trade (percent)	-6.2	-8.4	-0.9	2.0	-1.4	1.8	1.3	-0.2	-4.7	3.4
	Export market growth	0.4	0.8	7.8	10.1	6.7	10.1	6.6	4.4	13.5	14.5
	Domestic demand growth	0.3	6.1	4.8	6.7	9.6	9.4	6.5	5.0	2.7	-1.5
	GDP growth	2.0	4.3	5.2	6.8	6.0	6.8	4.8	4.1	4.1	1.1
	General government balance /GDP	-7.0	-3.4	-3.0	-3.1	-3.3	-3.2	-3.3	-3.4	-3.1	-5.3

Source: International Monetary Fund; *World Economic Outlook.*

Hits and Misses

6. **Poland has missed its three inflation targets to date.** Inflation overshot the band in 1999 and 2000 (by about 2 percentage points on average) as domestic consumption grew strongly and fuel and food prices increased sharply. Inflation started decelerating from mid-2000 as supply pressures eased, a sizable output gap developed and the zloty appreciated. The 2001 inflation target of 6–8 percent was undershoot by 2½ percentage points.

7. **Poland's peers had fairly similar experiences with misses (Table 3).** The relatively high rate of misses—albeit by fairly small margins—is indeed striking. Defining a miss as a deviation of actual inflation from its point target or from the edges of the band in excess of 1 percentage point, of the 57 targets set by these countries collectively between 1992 and 2001, 37 were missed, in one direction or the other.[3] Deviations were pronounced in the Czech Republic, Israel, Mexico, and Chile. In the first two cases, actual inflation fell significantly below the floor. The misses in the Czech Republic amounted to 4 percentage points in 1998 and 2½ percentage points in 1999. Israel missed its inflation targets by about 3 percentage points (on the downside) in 1999 and 2000. Mexico also consistently missed by large margins—about 5 percentage points in 1999–2000—but on the upside.[4] Even Chile, despite its longer experience with IT, missed the targets in four of the first five years, albeit by small margins. Low-inflation Korea also had a high miss rate. The experience of Colombia was similar to Poland in terms of incidence and scale of misses.

8. **The high rate of misses reflected a combination of technical factors and policy responses to exogenous developments.** Technical shortcomings in IT design—narrow bands, relatively short time horizons, and the volatility of targeted inflation—as well as the learning-by-doing process, all contributed. (Discussed in more detail in Section III). Equally important were policy responses to the global crises and domestic supply disturbances of the mid- and late 1990s. In Poland, the loosening of monetary conditions in 1999 in reaction to the Russia crisis and its subsequent tightening contributed to misses in both directions. In the Czech Republic, the slowdown in economic activity following the Russia crisis and a strong koruna contributed to misses on the down side. Israel also missed on the down side because of the tightening of monetary policy in response to the Russia crisis, the collapse of LTCM,

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[3] The average band width in the sample is about 1.34 percentage points. A threshold of 1 percentage point seems reasonable.

[4] Mexico formally adopted inflation targeting in January 2001 after it had made substantial progress in disinflation, fiscal consolidation and rebuilding the Bank of Mexico's credibility following the 1994–95 crisis. See *Mexico—Staff Report for the 2001 Article IV Consultation*, IMF Country Report 01/190 (Box 3, p. 21).

Table 3. Poland and Peer Countries: Inflation Targets and Outcomes, 1992-2001 1/

	Inflation		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Poland	Target	Upper	36.8	32.2	23.0	17.0	17.0	13.0	9.5	7.8	6.8	8.0
		Lower 2/								6.6	5.4	6.0
	Outcome		44.4	37.6	29.4	21.6	18.5	13.2	8.6	9.8	8.5	3.5
	Deviation		7.6	5.4	6.4	4.6	1.5	0.2	-0.9	2.0	1.7	-2.5
Czech Republic	Target	Upper							6.5	5.0	5.5	4.0
		Lower 2/							5.5	4.0	3.5	2.0
	Outcome								1.7	1.5	3.0	2.4
	Deviation								-3.8	-2.5	-0.5	
Chile	Target	Upper	16.0	12.0	11.0	9.0	6.5	5.5	4.5	4.3	3.5	4.0
		Lower 2/	13.0	10.0	9.0							2.0
	Outcome		12.7	12.2	8.9	8.2	6.6	6.0	5.2	3.3	3.8	3.7
	Deviation		-0.3	0.2	-0.1	-0.8	0.1	0.5	0.7	-1.0	0.3	
Colombia	Target	Upper	22.0	22.0	19.0	18.0	17.0	18.0	16.0	15.0	10.0	8.0
		Lower 2/										
	Outcome		26.8	25.1	22.6	22.6	19.5	21.6	17.7	16.7	9.2	7.6
	Deviation		4.8	3.1	3.6	4.6	2.5	3.6	1.7	1.7	-0.8	-0.4
Peru 4/	Target	Upper 3/			20.0	11.0	11.5	10.0	9.0	6.0	4.0	3.5
		Lower 2/			15.0	9.0	9.5	8.0	7.5	5.0	3.5	2.5
	Outcome				15.4	10.2	11.8	6.5	6.0	3.7	3.7	-0.1
	Deviation						0.3	-1.5	-1.5	-1.3		-2.6
Mexico	Target	Upper 3/			5.0	19.0	20.5	16.6	13.4	12.5	11.4	6.5
		Lower 2/ 3/										
	Outcome				7.1	52.0	27.7	18.9	18.1	17.4	16.8	4.4
	Deviation				2.1	33.0	7.2	2.3	4.7	4.9	5.4	-2.1
Brazil	Target	Upper 2/								10.0	8.0	6.0
		Lower 2/ 3/								6.0	4.0	2.0
	Outcome									8.9	6.0	7.7
	Deviation											1.7
Israel	Target	Upper	15.0	10.0	8.0	11.0	10.0	10.0	10.0	4.0	4.0	3.5
		Lower 2/	14.0			8.0	8.0	7.0	7.0		3.0	2.5
	Outcome		9.4	11.2	14.5	8.1	10.6	7.0	8.8	1.3	0.0	1.4
	Deviation		-4.6	1.2	6.5		0.6			-2.7	-3.0	-1.1
Korea	Target	Upper 2/							10.0	4.0	3.5	4.0
		Lower 2/ 3/							8.0	2.0	1.5	2.0
	Outcome								7.5	1.4	1.8	4.1
	Deviation								-0.5	-0.6		0.1

Sources: Bank of England, country authorities, IMF staff, and Mishkin and Schmidt-Hebbel (2001).

1/ Periods with public official inflation targets are denoted by shaded area.

2/ If no lower range is shown, the authorities were targeting a point.

3/ Where no data are shown, the authorities had no inflation target.

4/ Formal inflation targeting started in 2002. The Central Bank of Peru announced annual inflation bands between 1994-2001.

and the large appreciation of the currency.[5] In Chile, the 1999 target was undershot as macroeconomic policies were tightened to contain contagion from the Asian financial crisis and unfavorable supply shocks.

9. **The impact of target misses on the credibility of monetary policy is, perhaps surprisingly, unclear.**[6] Overall, the target misses in Poland and its peers suggest that inflation fighting credentials of the central bank have not been compromised. Like Poland, Chile (in the early 1990s) and Mexico (from 1996 onwards) successfully disinflated while missing targets. And, in the Czech Republic, the negative deviations from inflation targets in 1998–99 were eliminated in 2000–01, with no apparent loss in central bank credibility or price stability. The deviations gradually became smaller as the IT framework was improved. Even though inflation rose in the Czech Republic, it remained in the 2–3 percent range, broadly appropriate for a transition country undergoing real exchange rate appreciation, and changes in administrative prices.

10. **Breaches of the targets do not appear to have had a major impact on subsequent macroeconomic performance either.** Small breaches, especially when they are in either direction, cannot significantly affect growth. For instance, in the pre-crisis period 1992–97, Chile grew at a very high rate (on average about 8 ½ percent annually) even as it missed its inflation targets by small margins (on average about 1/3 percentage points per year) every year. As noted earlier, substantial misses frequently reflected the impact of large exogenous shocks. In the immediate aftermath of the 1997–99 global crisis, Poland's peers generally faired worse as many of them faced considerably more severe external shocks. But economic activity rebounded sharply in Korea and in the Latin American peers following the global crisis. Similarly, the Israeli economy grew very strongly from mid-1999 until the third quarter of 2000. Viewed in this light, the deceleration of domestic demand in Poland in the past three years was more pronounced, and its duration longer than its peers. Lately, however, the global slowdown has affected the peers as well. For instance, in Israel, the slump in the high-tech sector, and the deterioration in the security situation have all taken their toll.[7] The Czech Republic is an exception, with strong growth continuing into 2001.

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[5] Public Information Notice (PIN) No. 01/83, (August 6, 2001); *Israel, Staff Report for the 1999 Article IV Consultation*, IMF Country Report 00/57 (April), pp. 22–23. www.imf.org.

[6] There is an important asymmetry between undershooting and overshooting inflation targets. Unless there is a deflation (a problem faced by some countries already), policymakers probably worry more about inflation exceeding ceilings than undershooting floors. Inflation outcomes below the floor tempt policymakers to opportunistically build in disinflation gains in future targets, rather than to reflate back to the original targets.

[7] *Concluding Statement*, Interim IMF Staff Visit (February 26, 2002). www.imf.org

C. Macroeconomic Policies and Technical Issues Under Inflation Targeting

Policy Coordination

11. **A supportive fiscal policy and a balanced policy mix are essential for the success of IT.**[8] In Poland, the less-than-ideal macroeconomic policy mix of recent years—a loose fiscal policy and a tight monetary policy—has strained the IT regime. Poland's fiscal and monetary policies were tight in 2000 as activity began to weaken late in the year. As noted earlier, while fiscal policy loosened substantially in 2001, monetary easing began with a delay and interest rate cuts were gradual and deliberate because of perceived threats to inflation from food and fuel prices. Equally important, persistent uncertainties about the public finances over the short- and medium-term made the monetary authorities ever more vigilant against threats from fiscal profligacy.[9] Despite the 950 bps cuts in the NBP reference rate between February 2001 and May 2002, real interest rates remained fairly high in view of the strong disinflation. An appreciating currency also contributed to monetary restrictiveness. In the face of low growth and high unemployment, this has given rise to tensions between the government and monetary authorities, and threats to central bank independence.[10]

12. **The debate on the policy mix in the context of an IT regime is not unique to Poland.** Some of Poland's peers also had difficulty reacting to exogenous shocks because of their poor policy balance. The same debate has emerged in Israel as monetary conditions were tightened in the face of weakening activity. In other peer countries (e.g., the Czech Republic) coordination of macroeconomic policies was smoother, contributing to a more balanced policy mix overall, without jeopardizing the inflation targets. But even in the case of the Czech Republic, the tempo of easing of macroeconomic policies that started in late 1998 was, in hindsight, too slow and made the 1997–99 recessions longer and deeper than necessary.[11] On balance, the flexibility to deal with external shocks and decelerating activity has been hindered by inconsistent policies in a number of Poland's inflation-targeting peers.

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[8] It can be shown formally that a version of Sargent and Wallace's unpleasant arithmetic applies to an IT regime under conditions of fiscal dominance. For a general equilibrium treatment with optimizing agents, see Michael Kumhof et al, 2001.

[9] MPC statements in 2001–02 often referred to the "big uncertainty related to the public finance area" in rationalizing the MPC decisions to either keep interest rates unchanged or to cut by small amounts. See *Information on the Meeting of the MPC*, National Bank of Poland, March 2002; February 2002; December 2001; October 2001. www.nbp.pl.

[10] The Polish parliament passed a motion of censor on the NBP in March 2002. Draft legislation has also been submitted to parliament to enlarge the mandate and the membership of the MPC.

[11] See *Czech Republic—Report on the 2000 Article IV Consultation*, p. 6.

But, whereas the macroeconomic policy mix has been less than ideal in other peer countries, it has not generally led to public policy conflicts, as in Poland and Israel.

13. **Uncertainties about the cyclical position of the budget have weighed heavily on monetary policy decisions in Poland as well as its peers.** Lags in the availability of comprehensive fiscal data and the vulnerability of the fiscal position to exogenous developments are key contributing factors. In Poland, for example, the final budget outturn of sub-national governments and health and social security funds are not known until well after the end of the year. This uncertainty has made the MPC more cautious in setting policy during the course of the year. A large part of the deterioration in the fiscal position in Poland, as well of its peers, has reflected the operation of fiscal stabilizers that appropriately supported activity without stoking inflation.[12] However, in this group of countries, it is technically difficult to determine the precise role of fiscal stabilizers. Real-time assessment of the overall fiscal position, and of the structural fiscal balance, would certainly reduce these uncertainties and facilitate a more flexible monetary policy stance in the face of weakening activity. Closer coordination and better information flow between the fiscal and monetary authorities would be helpful as well.

Targets and Instruments Under Inflation Targeting

14. **Narrow bands, volatile price indices, and short time horizons all contributed to the breaches of the targets (the controllability of inflation problem).** Frequent changes in the policy interest rate in the face of large shocks (the instrument instability problem) also contributed. Poland and a number of its peers widened their inflation target bands in response to the misses. The experience with widening the band as a safeguard against misses has been mixed. In Poland, the band was gradually widened from 1.2 percentage points in 1999, to 1.4 percentage points in 2000, and to 2 percentage points in 2001. Yet, the targets were missed in all three years. In the Czech Republic, the band was widened from 1 to 2 percentage points following the large misses in 1998 and 1999. This subsequently helped reduce the incidence of target breaches. In Brazil, a fairly wide band (4 percentage points) was adopted in the first three years of targeting and the target was only missed once (in 2001, by 1 ½ percentage points). Peru moved in the other direction and narrowed the band from 5 percentage points in 1994 to 2 percentage points in 1995–96 following successful experience with the central bank's operational targets. Similarly, in Israel the band was narrowed from 2–3 percentage points in 1995–98 to 0–1 percent in 1999–2001 just as large external shocks buffeted the economy—the targets were breached. Judged by these experiences, widening the band would help, but probably would not by itself solve the problem. As argued by Mishkin and Schmidt-Hebbel (2001), the uncertainty around inflation targets at the one-year horizon is about 5 percentage points. Fully accommodating this would require bands that are too wide to be useful in practice (Haldane and Salmon, 1995 and Stevens and Debelle, 1995).

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[12] Fiscal positions deteriorated in the face of weak activity in Chile (1998–99), Colombia (1998–99), Peru (1999), Brazil (1997–99), and Korea (1998) (Table 2).

15. **Some countries have approached the problem by targeting less volatile price indices.** In Poland, the NBP targets the headline CPI, a widely-used and understood measure of inflation, but one that is highly vulnerable to food and fuel price movements. Korea formally targets a measure of core inflation with the most volatile elements of inflation stripped out. Chile targets headline inflation, but bases monetary policy decisions on core inflation. And, until April 2001, the Czech National Bank (CNB) targeted net inflation, which excludes changes in indirect taxes and subsidies and in regulated prices. Weaknesses in statistics are usually a problem in constructing core inflation measures. But even imperfect core indices may be more appropriate for IT than highly volatile indices, as argued by Fischer and Orsmond, 2000 and Debelle et al, 1998. The benefits in terms of transparency and credibility from using a widely recognized index, such as the headline CPI, would need to be weighed against the loss of credibility resulting from frequent and large misses due to the economy's vulnerability to large shocks. The choice of the inflation target is therefore a judgment call, which should take into account the unique features of and the constraints in each country.

16. **Introducing escape clauses in IT frameworks is another way of addressing the impact of large exogenous shocks on prices and increase monetary policy flexibility.** This approach was followed in the Czech Republic. In late 1998, the central bank, in response to breaches of the target, articulated a list of factors that could affect inflation, but would not trigger monetary policy reactions (Jonáš, 2000). These factors included "major deviations" in world prices of energy, raw materials, and other commodities; the exchange rate; supply shocks in agriculture; natural disasters; large changes in regulated prices; and step changes in indirect taxes (April 2001 Inflation Report). More broadly, this experience shows that large deviations from inflation targets may have beneficial effects if they lead to refinements in the practice of inflation targeting.

17. **Short IT time horizons in Poland and its peers (about one year) also contributed to the high rate of target misses.** A short fixed time horizon for inflation targets could also lead to frequent changes in policy interest rate if the central bank attempts to hit the target in the face of large shocks.[13] This appears to have been part of the problem in Poland and a number of its peers, including Israel (Fischer and Orsmond, 2000). Longer IT horizons would reduce the likelihood that monetary policy is driven by short-term fluctuations in volatile prices and lower instrument instability. Continuos bands within timeframes of 2–3 years are consistent with the theory and with the practices of inflation-targeting industrial countries, such as Australia, Canada, the U.K., and New Zealand.

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[13] This experience is not unique to Poland and its peers. In the early years of inflation targeting in New Zealand, the Reserve Bank based its policy stance on its direct impact on inflation, which it later recognized as being hazardous. See Reserve Bank of New Zealand, 1996, *Briefing on the Reserve Bank of New Zealand*, Wellington: Reserve Bank of New Zealand (October), pp. 28–29, cited in Ball, 1999.

Interest Rate Variability and Levels and Policy Consequences

18. **Interest rate variability has been substantial under IT, both in Poland and in some of its peers.** Because of the lack of a reliable inflation forecasting mechanism, policy rates react with a lag to backward indicators. Together with other IT shortcomings—volatile headline CPI, narrow bands, and fixed-date targets—this tends to produce wide swings in interest rates. Indeed, the policy rates in Poland have fluctuated considerably. Between August 1999 and August 2000, the NBP reference rate was raised by a cumulative 600 bps. The easing cycle that began in February 2001 has involved a move in the opposite direction of 950 bps to date. Policy rates in some of Poland's peers also reacted strongly to short-term developments. In Israel, where the central bank targets headline inflation on a year-to-year basis, monetary policy responded to fluctuations in fruit, vegetable and housing prices, and hence interest rate variability was very high (Fischer and Orsmond, 2000).[14]

19. **Real interest rates increased in many of the peer group countries during disinflation, attracting capital flows and posing additional challenges.** While activity weakened, real interest rates rose in almost all peer countries, in some cases to levels even higher than those in Poland (Table 4). (Admittedly, this reflected crisis situations in some countries.) In the peer group, only the Czech Republic maintained low real interest rates. In Poland, as well as in some of its peers, high real interest rates in the context of an open capital account attracted inflows and contributed to real exchange rate appreciation. While helping disinflation, this constrained exports and growth.

20. **More directly, appreciating real exchange rates pose a dilemma for policymakers operating an IT regime.** To the extent that the appreciation is a real, equilibrium phenomenon reflecting differential productivity in the traded goods sector, monetary policy cannot reverse it. But the equilibrium real appreciation must be estimated in each case, and its impact on inflation taken into account in setting inflation targets. Miscalculation and ending up below the target has a cost in terms of loss of output and credibility. Temporary shocks to real exchange rates, if they can be clearly identified, pose a different dilemma. Policies should be discriminatory in this case: be passive toward temporary supply shocks, but resist the second order effects to ensure that inflation at the appropriate horizon stays close to target. This may pose a challenge if policy is focused on achieving a short run target, as is the case in Poland and elsewhere in the peer group.

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[14] See also background staff studies for the 1997 Article IV consultation, and *Israel—Staff Report for the 1999 Article IV Consultation*, Washington DC: International Monetary Fund Country Report 00/57 (April, 2000), p. 24. www.imf.org.

Table 4. Poland and Peer Countries: Monetary and Exchange Rate Policy, 1992-2001 1/

		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Poland	Nominal bank deposit rate	37.8	34.0	33.4	26.8	20.0	19.4	18.2	11.2	14.2	13.0
	Real bank deposit rate	-3.7	-1.0	0.9	-0.9	0.1	3.9	5.7	3.7	3.7	6.4
	CPI-REER (change)	6.4	7.3	0.8	8.2	8.8	2.4	5.0	-4.0	8.3	13.1
Czech Republic	Nominal bank deposit rate		7.0	7.1	7.0	6.8	7.7	8.1	4.5	3.4	3.0
	Real bank deposit rate		-11.4	-2.6	-2.0	-1.8	-0.7	-2.3	2.3	-0.5	-1.8
	CPI-REER (change)	4.6	16.3	5.1	3.4	6.6	0.8	8.2	-1.4	0.1	5.3
Chile	Nominal bank deposit rate	18.3	18.2	15.1	13.7	13.5	12.0	14.9	8.6	9.2	6.2
	Real bank deposit rate	2.5	4.9	3.3	5.1	5.7	5.5	9.3	5.1	5.2	2.4
	CPI-REER (change)	5.9	2.4	3.0	6.0	3.4	9.3	-1.7	-5.2	0.6	-7.7
Colombia	Nominal bank deposit rate	1560.2	3293.5	5175.2	52.2	26.4	24.4	28.0	26.0	17.2	12.8
	Real bank deposit rate	1207.0	2671.6	4194.1	25.9	4.7	5.0	7.9	13.7	7.3	3.8
	CPI-REER (change)	-11.8	5.6	3.6	9.4	5.9	4.3	-2.3	-33.6	9.1	-13.3
Peru 4/	Nominal bank deposit rate	59.7	44.1	22.3	15.7	14.9	15.0	15.1	16.3	13.3	10.6
	Real bank deposit rate	-8.0	-3.0	-1.1	4.1	3.0	6.0	7.3	12.4	9.2	8.0
	CPI-REER (change)	3.7	-7.1	7.6	0.4	2.0	4.0	-0.3	-9.0	3.6	4.6
Mexico	Nominal bank deposit rate	14.5	15.1	13.3	38.1	24.7	14.7	13.8	9.6	6.3	5.2
	Real bank deposit rate	-0.9	4.8	5.9	2.3	-7.2	-4.9	-1.9	-6.0	-2.9	-1.4
	CPI-REER (change)	8.2	7.5	-3.6	-33.1	13.0	17.8	1.9	9.0	10.0	8.2
Brazil	Nominal bank deposit rate	1560.2	3293.5	5175.2	52.2	26.4	24.4	28.0	26.0	17.2	17.7
	Real bank deposit rate	47.9	67.4	142.4	-8.3	9.2	16.3	24.0	20.2	9.5	10.3
	CPI-REER (change)	-11.8	5.6	3.6	9.4	5.9	4.3	-2.3	-33.6	9.1	-13.3
Israel	Nominal bank deposit rate	11.3	10.4	12.2	14.1	14.5	13.1	11.0	11.3	8.6	6.5
	Real bank deposit rate	-0.6	-0.5	-0.1	3.7	2.9	3.7	5.3	5.9	7.4	5.7
	CPI-REER (change)	-2.5	-1.2	1.1	0.8	5.9	7.0	-3.0	-3.8	8.0	-5.2
Korea	Nominal bank deposit rate	10.0	8.6	8.5	8.8	7.5	10.8	13.3	7.9	7.9	6.1
	Real bank deposit rate	3.5	3.6	2.1	4.2	2.5	6.1	5.4	7.1	5.6	1.4
	CPI-REER (change)	-5.8	-0.7	0.8	1.2	3.5	-6.1	-25.6	13.5	8.1	-5.4

Sources: WEO, and IFS.

1/ Periods where the external environment is similar to Poland 1998-2000 are denoted by boxes.

21. **Finally, who should set the target?** There is considerable diversity in the peer group. In Poland, the Czech Republic and Mexico, the targets are set by the central bank. In Peru the central bank sets the target in consultation with the government. In Israel and Korea, the targets are set by the government, in consultation with the central bank. Government involvement in the setting the target is also common in industrial countries operating an IT framework. In New Zealand, the target is set jointly by the central bank and the government. In the U.K., it is set by the government. Experience shows that government involvement is neither a necessary nor a sufficient condition for eliminating policy conflicts. In Israel, where conflict has emerged, the target is set by the government in consultation with the central bank. On the other hand, the Czech National Bank sets the inflation target alone, and while cooperating closely with the government it retains its creditability as an independent inflation fighter.

D. Concluding Remarks

22. **Like most of its peers, Poland has operated its IT regime under difficult circumstances.** External shocks, difficulties in macroeconomic policy coordination, and technical shortcomings all played important parts in causing inflation targets to be missed. In many respects, Poland's experience had striking parallels amongst its peers. They all disinflated successfully while missing targets frequently; many experienced sharp decelerations in domestic activity following external shocks; and many witnessed sharp increases in real interest rates as activity slowed. But, not many experienced, as Poland did, a combination of rising real interest rates and appreciating real exchange rate as activity weakened.

23. **There a number of ways in which Poland's IT regime could be strengthened.** Some are technical: widening the band, relying on core inflation, introducing escape clauses, and lengthening the time horizons. Others suggest a better coordination of macroeconomic policies and information flow. In any event, the low-inflation goals of the central bank could best be achieved in an environment of political consensus combined with unfettered instrument independence.

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