April 1999

IMF Staff Country Report No. 99/32

Republic of Poland: Selected Issues

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International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

REPUBLIC OF POLAND

Selected Issues

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Approved by European I Department

February 23, 1999

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I. TAX REFORM IN POLAND[1]

A. Introduction

1.   As one of many elements to promote economic growth, Poland needs to strengthen and restructure its domestic tax system. The government has embarked on an ambitious program of fiscal restructuring, which includes containing the general government deficit; shifting the emphasis of the tax system from direct and international trade taxes to indirect taxes; and progressively harmonizing the tax structure with Western European countries. Tax reform in Poland is constrained by the need to reconcile different domestic interests and also by Poland's intention to strengthen its trade ties with Western Europe and to join the European Union (EU) sometime early in the next century.

2.   As part of its accession to the EU, Poland must make changes in several parts of its tax system to bring its laws and regulations into uniformity with EU directives. In the area of direct taxes there are no firm directives, although harmonization of capital income taxes has recently become a contentious issue among some members of the EU. In a world characterized by increasingly mobile factors of production, it has become more important that countries with close economic relations achieve some uniformity in certain areas of income taxation. Poland is currently considering a substantial reform of its system of income taxes and must ensure that the reformed income tax does not present any impediments to closer trade relations with Western Europe. In the area of indirect taxes, EU directives set out clear norms that Poland must meet with regard to value-added taxes and excise taxes. The country has been making steady progress in adapting its tax system to these norms.

B. Current Tax System

Personal income tax

3.   In common with many countries, Poland's personal income tax is based on a definition of global personal income, though some income sources (such as dividends and interest income) are taxed under separate schedules. In addition, agriculture, forestry, and inheritances are taxed under separate laws. Spouses can file jointly and split their incomes. The tax schedule has three rates: 19 percent, 30 percent, and 40 percent. There is a basic credit that all taxpayers can claim, adding to the progressivity of the tax schedule. The tax brackets and basic credit are indexed to previous wage growth. The income taxes on some sources of income (e.g., dividends) are flat rate taxes in the range of 10–20 percent. There are many exemptions, deductions, and credits. Interest income from bank deposits and government securities, and capital gains from sales of publicly traded stocks are exempt from tax. There are deductions for presumed employment-related expenses, social security contributions, charitable contributions, and a variety of other purposes. In addition, there are significant

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[1]Prepared by Janet Stotsky.

credits for housing, education, and medical expenditures. These tax preferences are designed to encourage socially desirable activities and to adjust tax liabilities for perceived differences in ability to pay. Taxes on wages are collected through withholding, though all individuals (or their employers on their behalf) must file a final reconciliation. Self-employed individuals calculate net income largely on the basis of rules that apply to corporate income and then pay tax on a self-assessed basis. Two types of presumptive taxes apply to small self-employed taxpayers with turnover below Zl 400,000 in 1999.

Social insurance taxes

4.   Starting in 1999, both employers and employees are required to pay a contribution to the pension and disability fund (until 1999, only employers were liable for paying this tax). For the purposes of the social insurance taxes, employees' wages are grossed up by the amount of tax employees pay to the social insurance funds.[2] Employers pay a tax of 22 percent of gross wages and employees pay a tax of 23 percent. (The effective rates on grossed up income are 17.9 percent and 18.7 percent, respectively). Social insurance fund contributions are withheld from wages. Self-employed individuals pay these taxes on a self-assessed basis that is slightly different from that applying to wage earners. Employers pay an additional tax of 2.6 percent on grossed up wages to the Labor Fund, which administers unemployment compensation and job training programs.

Corporate income tax

5.   Poland has a standard corporate income tax. The tax rate on profits was 36 percent in 1998, but has been lowered to 34 percent in 1999. All interest income and capital gains and losses are taxable as ordinary income at the standard rate. Depreciation is straight line, with accelerated depreciation allowed for some assets. Inventory accounting is based on standard principles. There are special investment incentives and a number of Special Economic Zones, which provide significant tax breaks. These tax incentives have complex qualifying conditions. Some cost deductions, such as for motor vehicles, advertising, and representation, are subject to limits. There is a 20 percent withholding tax on dividends paid to individuals.

Value-added tax (VAT)

6.   Poland's VAT is an invoice-style, consumption- and destination-based tax, as is commonly found in the EU. The tax base includes excise duties and customs fees. The standard rate is 22 percent. A 7 percent rate applies to most processed foodstuffs, building materials, certain construction materials, articles for children, musical instruments, and intercity passenger transport. A temporary 4 percent rate applies to most medicines. Exports, agricultural inputs, some medical and veterinary supplies, and books and magazines are zero-

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[2]At least initially, this grossing up leaves employees with the same net income after social security taxes in 1999 as they had in 1998, ignoring any wage adjustments.

rated. Unprocessed agricultural produce, financial services (except currency exchange), insurance, education, health services, art and culture, municipal (except heat, gas, and electricity) and postal services, apartment rental, and sales of land are exempt from VAT. Taxpayers with annual turnover below Zl 80,000 are not obligated, but have the option, to register for VAT.

Excises

7.   The tax applies to a wide range of domestically produced and imported goods and services, including alcoholic beverages, tobacco, fuels, passenger cars, luxury electronic equipment, gambling, salt, plastic packaging, furs, cosmetics, luxury yachts, and sailboats. Taxes are not levied on exports.

Revenue structure compared to other OECD countries

8.   Unlike many transition economies, Poland has maintained a high level of revenue collections. Tax revenues (excluding social insurance contributions and local taxes) are estimated to be about 24 percent of GDP in 1998. Total general government tax revenues are estimated at about 37 percent of GDP in 1998. This level of collection places Poland on a par with Western European nations. The strong performance of indirect taxation is notable—the combination of revenues from the VAT and excise taxes is estimated to amount to almost 13 percent of GDP in 1998. Nonetheless, the yield from personal and corporate income taxes is also significant—an estimated 9 percent of GDP in 1998 with about 6¼ percentage points of GDP from the personal income tax and 2¾ percentage points of GDP from the corporate income tax. Setting this performance in an international context, Poland's direct tax yield is broadly in line with OECD experience—within the OECD, during 1990–95 income taxation averaged 9 percent of GDP. Moreover, the decomposition between personal and corporate income taxes mirrors that in the OECD generally—for example, during 1990–95, the average corporate tax yield for OECD countries was 2½ percent.

9.   In the past decade there has been a trend toward lowering the top marginal income tax rates in OECD countries.[3] Poland's top marginal rate of 40 percent is consistent with OECD practice, though in combination with Poland's high social insurance contributions the rate on labor income is higher than in most OECD countries. Poland's current three brackets are fewer than is typical of OECD countries.

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[3]The U.S. is a notable exception, with marginal tax rates creeping upward since reforms in 1986 significantly lowered the highest marginal tax rates..

10.   In OECD countries, there has also been a trend toward lower corporate income tax rates. In contrast to the personal income tax, there are a significant number of OECD countries with lower corporate income tax rates than in Poland. Moreover, unlike Poland, many OECD countries have some form of integrated corporate and personal income tax systems that alleviate the double taxation of corporate profits.[4]

11.   The level of taxes on labor in Poland is among the highest in the OECD—taking the case of a one-earner married couple where the worker earns the average production wage, the OECD estimates that the combination of employers' social security contributions and personal income tax less transfer payments amounted to almost 40 percent of gross labor costs in 1996.

Principles underlying tax reform

12.   The key objectives of tax reform are to have a tax system that is efficient, fair, and simple. To accomplish these goals, a tax system should rely heavily on broad-based taxes, such as the personal income tax and VAT, and should levy as low marginal tax rates as are consistent with achieving fiscal revenue targets and the desired degree of progression.

A critique of the current tax system

13.   The Polish tax system has some notable strengths and weaknesses. The personal and corporate income taxes are the weakest elements. The main weakness of the personal income tax is that the definition of the base is very narrow. A considerable share of income is exempt from tax, and deductions and credits are given for an extensive range of activities. The broad range of tax preferences has serious implications for a personal income tax. First, tax preferences distort economic decisions, which are overly influenced by such preferences rather than by underlying economic values. The Polish tax system endeavors to achieve many social objectives through the tax system. Tax incentives for housing, education, medical care, and charitable contributions seek to encourage these activities. Nevertheless, typically there are more cost effective ways than the tax system for achieving important social objectives. First, direct spending programs are often more transparent and efficient in subsidizing worthwhile social activities. Second, the erosion of the tax base by tax reliefs and privileges means that marginal tax rates must be higher to achieve a given revenue objective. Third, because higher income taxpayers typically benefit most from tax preferences, the tax system is less progressive overall than might be indicated by progressivity in marginal tax rates.[5]

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[4]Double taxation refers to the payment of tax on dividends, which are paid out of after-tax corporate income.

[5]Progressivity is measured by the degree to which the average rate of tax increases as income rises. A schedule of increasing marginal tax rates typically gives rise to a progressive tax.

14.   The personal income tax includes a standard credit, which is a desirable feature in that it enhances the progressivity of the tax. Although this progression could also be achieved with a standard deduction or exemption, the benefit of a credit is that the tax saving is the same for all taxpayers, unlike a deduction or an exemption where the value is proportional to the marginal tax rate of the taxpayer and hence benefits higher income taxpayers disproportionately.

15.   Another weakness of the Polish tax system is that social insurance taxes are very high. Since these taxes are levied only on wage income, combining their effects with those of personal income taxes results in a very high tax burden on labor income. These high social insurance tax rates, as well as the weak link between the rates and subsequent pension entitlements, has resulted in strong incentives to under report wage income and work in the grey market, which impairs collections of social insurance taxes and personal income tax. The new pension system, which takes effect in 1999, strengthens the link between contributions and benefits, and is thus likely to encourage more accurate reporting of wages and greater compliance with the tax laws.[6]

16.   Similarly, the current corporate income tax code also has serious deficiencies, particularly in the definition of deductible costs of business, and the system of depreciation allowances, investment allowances, and tax holidays. Some legitimate business expenses, such as those for advertising, are arbitrarily limited. Tax incentives for investments in capital goods and in Special Economic Zones seek to increase the level of domestic and foreign investment, but are excessively complex and poorly structured.

17.   The treatment of some forms of interest payments is asymmetric under the personal and corporate income taxes. Individuals do not pay income tax on capital gains arising from the trade of listed stocks and bonds or on some types of interest received; in contrast, such returns are taxable if they are a component of company income. In addition, there are advantages for the self-employed to choose the noncorporate form of organization rather than to incorporate and pay tax under the personal income tax.

18.   The income taxes are excessively complex, making it difficult to administer the tax system effectively. As a result, the tax system collects less revenues than it should, and the fairness of the tax system is undermined. Tax officials, struggling to cope with the complexities, do not have the time or the staff resources to determine the extent to which taxpayers make a reasonably proper declaration of income and expenses.

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[6]The first tier of the new arrangements remains the traditional pay-as-you-go system, although for future retirees there will be a closer linkage between contributions and benefits. The second and third tiers are fully funded systems of individual accounts (the second tier is mandatory and the third tier optional). Hence there is also a linkage between contributions and benefits.

C. Reform

Personal income tax

19.   The personal income tax would be significantly improved if many of the exemptions, deductions, and credits currently in the tax code were eliminated. These reforms would simplify the tax code and make it easier to administer. At the same time, they would enhance the efficiency of the income tax. By broadening the tax base and allowing a lowering of marginal tax rates, they would reduce distortions affecting decisions to work and invest.

20.   An excessive number of reliefs in the tax system, including those for housing, education, and medical expenses, should be eliminated or reduced. As regards housing preferences, the repeal could be introduced in parallel with a well-designed expenditure program to expand the supply of housing for low-income groups, in an amount commensurate to the tax savings. Or the nominal amount of the tax preference could be capped. A few targeted deductions, such as a rationalized deduction for charitable donations, may be warranted and would be consistent with international practice.

21.   With a simpler income tax, greater use should be made of final withholding on labor income, which greatly facilitates tax administration. The number of taxpayers who must file tax returns either themselves or through their employers should be sharply reduced by greater recourse to final withholding of income taxes. In many countries, for example, taxpayers who have only wage income or interest income do not need to file a return. To facilitate final withholding and in line with recent international trends, joint filing for married taxpayers could be eliminated while accommodating differing family circumstances through allowances for spouses and dependents rather than through income splitting. In addition, spending programs can also take family circumstances into account.

22.   The coverage of the personal income tax should be extended. As regards capital gains, the most significant gains are likely to arise from the sale of financial assets—apart from residential real estate gains that are already covered by the personal income tax. Given the incipient development of capital markets in Poland and the difficulty in administering capital gains taxation, it may be wise for Poland to move cautiously in this area. An area where Poland may find it easier to collect tax is on interest on bank deposits and government securities, which is currently exempt. Final withholding is one way to ease the administration of income tax on interest. For example, in addition to the role of final withholding on labor income, some industrial countries (the Nordic countries) are now using final withholding on interest income.

23.   The schedule of marginal tax rates, in combination with the definition of the base, determines taxpayers' liabilities under the tax. Although a progressive marginal tax rate schedule is most typically found in income tax systems, any degree of progression is potentially consistent with a society's definition of fairness. In a country, such as Poland, which is accustomed to a high degree of redistribution from the wealthier to the poorer, a

schedule with greater progression may be more consistent with prevailing notions of fairness than one with little or no progression. In combination with a basic credit (or a high tax-free threshold), even a single, positive marginal tax bracket would yield a progressive income tax. Nevertheless, it may not be possible to satisfy the revenue needs from the personal income tax while simultaneously meeting demands for a fair system of taxation with a single, positive marginal tax bracket.

Corporate income tax

24.   Paralleling the recommendations for the personal income tax, the priority should be to simplify the corporate income tax and broaden the tax base. Poland's highest priority is to ensure that the reformed tax system can accommodate the new challenges arising from EU membership and globalization pressures.

25.   The tax treatment of investment is a critical area for reform. The present provisions for depreciation of most capital investments are too complex and too ungenerous, while those for investment incentives are too complex, in some ways too restrictive and in other respects ill-targeted. Corporate tax reform presents the opportunity to simplify the present corporate income tax, for both taxpayers and the tax administration, to reduce the scope for abuse, to make the corporate income tax more attractive to investors, and to reduce the extent to which it distorts business investment in unproductive ways.

26.   There is also scope for improvement in other areas of the corporate income tax, including the taxation of debt interest and bad debt, the taxation of mutual and other collective investment vehicles/funds, the taxation of company reconstructions and leasing, the taxation of foreign exchange gains and losses, and capital gains and losses, and transfer pricing and thin capitalization.

27.   It is desirable that the income tax regime maintain an alignment of the corporate income tax rate with the top marginal tax rate under the personal income tax in order to ensure that the tax rate will not be a determining factor in decisions whether to adopt a corporate or a noncorporate form. Along with revenue considerations, this consideration limits the extent to which the corporate income tax rate should ultimately be lowered.

28.   Clarity is an important objective for a tax system. Any reform should include a complete rewriting of the income tax. This should be combined with establishing a capability in the Ministry of Finance to give guidance on the law and regulations.

VAT and excises

29.   Poland must continue to adjust indirect taxes to meet directives of the EU. The most important changes to the VAT are changes in the rate of tax on unprocessed agricultural produce and means of agricultural production, building materials and apartments in multi-family construction, articles for children, municipal services and services of culture, books and

magazines, and legal services. Poland must also increase the excise tax rates on cigarettes and engine fuels to meet minimum levels set out in EU directives. In addition to these reforms, it may also be desirable to raise the threshold under the VAT to remove more small taxpayers from the obligation to pay tax. Even if this threshold is left in place, it would be desirable to use the same threshold for VAT as is used for presumptive income taxation, though the appropriate threshold probably lies closer to the existing VAT threshold of Zl 80,000 than the presumptive income tax threshold of Zl 400,000. Ultimately, the presumptive income tax should be phased out and taxpayers brought into the standard tax system.

Revenue implications of tax reform

30.   Although the goal of the government is to gradually reduce the burden of the government on the economy, given the important budgetary needs of the government in the short run associated with structural reforms and the goal of EU accession, any reforms should be designed with a view to being revenue neutral. Although it is always tempting for a government to project that reducing marginal tax rates and tax simplification will lead to better compliance and large revenue gains, this is likely to be unrealistic. It usually takes a long time and sustained efforts to improve tax compliance.

D. Conclusion

31.   Tax reform in Poland is headed in the right direction. While the goal of EU accession leaves little scope for choice in reforms to the VAT and excises, there is greater scope for choice in the area of direct taxes. The goal of reducing marginal tax rates under the personal income tax system is sound, but any reduction of marginal tax rates must be accompanied by sensible base broadening, either through changes in tax policy or through improvements in tax compliance, to achieve budgetary goals. There is also considerable scope to improve the basic structure of corporate income taxation. Some reforms, such as revision of the system of depreciation allowances, may entail revenue losses, which would need to be offset by gains elsewhere, such as through the elimination of special incentives.

II. CAPITAL FLOWS TO POLAND: A MEDIUM-TERM PERSPECTIVE [1]

A. Introduction

32.   In recent years, Poland has been Central and Eastern Europe's most dynamic economic performer, posting an annual average growth rate of 6 percent over the past five years. Annual inflation has been on a steady downward path and reached the single digits, for the first time since transition, in the fourth quarter of 1998. Moreover, Poland's sound policy fundamentals have supported market-oriented reforms. Over the past few years, these strong fundamentals have attracted substantial capital inflows, particularly in the form of foreign direct investment, which have played an increasingly important role in Poland's growth and development. These inflows accelerated during 1998 and remained remarkably stable even in the wake of the Russian crisis. This chapter describes developments in the financial account of Poland's balance of payments since 1991, examines some of the macroeconomic consequences of these flows, and compares Poland's foreign direct investment developments with other transition and emerging market economies.

B. Capital Flows and the Impact on Monetary and Exchange Rate Policy

33.   A striking feature of the Polish economy since 1995 has been the strength of capital inflows. Since its debt restructuring in October 1994, Poland has been particularly successful in attracting foreign direct investment (FDI) and has now surpassed Hungary as the largest cumulative recipient of FDI among the European transition economies. This is in sharp contrast to the early years of Poland's transition, when Poland experienced a net outflow of capital.

The early years of transition

34.   Poland began its transition with a high level of external debt, much of it the result of heavy borrowing during the early 1980s to support high government expenditures. When its stabilization program began in 1990, Poland's external debt stood at about 83 percent of GDP. As its ties to the Soviet Union unraveled, Poland suffered a rapid loss of access to credit, which was exacerbated by the fact that Poland had not been fully servicing its debt to official creditors since the 1980s and had partially suspended the servicing of its debt to private creditors in 1990. Thus, during the initial stage of transition, official flows and exceptional financing (debt relief and accumulation of arrears) played the dominant role in Poland's external financing, while private capital flows were negative on a net basis.

35.   The Paris Club debt reduction agreement, signed in April 1991, lowered Poland's external debt to 63 percent of GDP by the end of the year. Poland's debt ratio declined further to 56 percent of GDP by end-1993, although the country continued to incur external arrears

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[1] Prepared by Nancy Wagner.

during 1992 and 1993. For the most part, Poland remained cut off from the international capital markets during this period, as the debt problem remained at the fore. Nevertheless, Poland began the structural reforms needed to attract capital flows. Thus, FDI and portfolio equity investment were liberalized in 1991, although portfolio inflows to debt securities were not liberalized until 1993.

Access to private capital markets

36.   The turning point from the perspective of the international financial markets occurred in October 1994, with the conclusion of the London Club Agreement (the Brady debt reduction plan). Debt relief was on the order of US$8 billion, and arrears declined by almost US$7 billion (Figure 1). By the end of 1994, Poland's external debt stood at 45 percent of GDP. Thus, between 1990 and 1994, Poland shifted from being a heavily to a moderately indebted country, which finally allowed the country access to the global private capital markets. Poland's international creditworthiness was also underpinned by growing political and social stability.

37.   By 1995, private capital inflows began to play an important role in the balance of payments, as exceptional financing was replaced by voluntary flows of a long-term nature. Although foreigners had been permitted to invest in Treasury bills and securities on the Warsaw stock exchange as early as 1992, portfolio investment picked up only after the agreement with the London Club. FDI inflows also surged following the agreement. FDI, on a net basis, more than doubled in 1995 compared with 1994. The growing current account surplus and the sharp reversal in Poland's financial account position led the National Bank of Poland (NBP) to conduct large-scale sterilization operations, further stimulating interest-sensitive inflows. Official reserves soared in 1995, increasing by almost US$9 billion.[2] To introduce some exchange rate risk, a crawling band, with a fluctuation margin of ±7 percent, replaced the zloty's crawling peg in May 1995.[3]

38.   The transition process in Central and Eastern Europe has typically been characterized by widening current account deficits associated with a sharp increase in consumption, owing to pent-up demand from the previous suppression of consumption, and in investment to replace largely obsolete capital stock. Poland was no exception, but the deterioration in the current account began quite late into the transition period.

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[2] It is interesting to note that increases in net international reserves had exceeded those of gross official reserves in the three years prior to 1995, probably reflecting the preferences of banks to go long in foreign exchange on expectations of zloty depreciation. The situation reversed in 1995 and 1996, with gross official reserves increasing more than net international reserves. During this period, there were widespread expectations of zloty appreciation.

[3] At this time the central bank's foreign exchange fixing was also introduced.

Figure 1. Poland: Financial and Current Account Developments

Exceptional Financing and the Financial Account
(In millions of U.S. dollars)

Current and Financial Account Developments
(In millions of U.S. dollars)
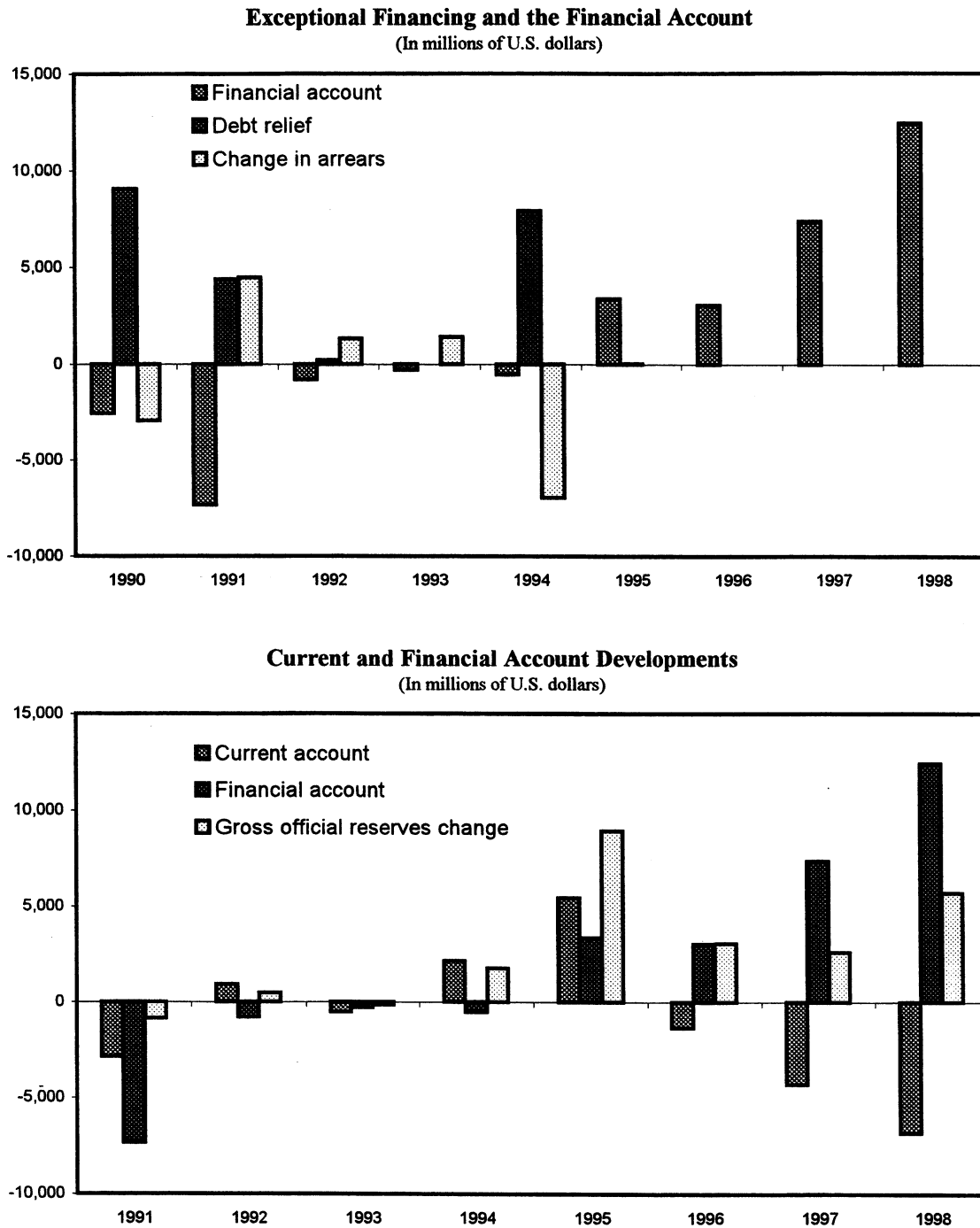
Sources: National Bank of Poland; staff estimates.

39.   Real exchange rate appreciation has also been a normal part of the transition process, as structural reform, privatization, and foreign investment leads to greater productivity, particularly in the tradables sector. The delay of Poland's access to international capital markets in the early 1990s and the postponement of privatization reduced upward pressure on the real exchange rate. This could have been one of the contributing factors underpinning the export-led growth during this period, which resulted in current account surpluses. However, after Poland gained access to the capital markets, the current account deterioration began; after registering a surplus of more than 3 percent of GDP in 1995, the current account reversed course and went into deficit in 1996, and the deficit has steadily widened each year since then. Over the same period, the real effective exchange rate (CPI-based) appreciated by 18 percent.

40.   The decline in foreign interest rates in 1996 encouraged strong foreign demand for Polish securities. The surge in inflows aroused concerns about exchange rate appreciation, potential loss of export competitiveness, and the inflationary impact. With the shift in the exchange rate regime in mid-1995, the NBP now had scope to introduce greater flexibility in its interest rate policy. To this end, the NBP lowered its base lending rates twice in 1996 to reduce the interest rate differential between Polish and foreign securities. The more volatile exchange rate and lower, more flexible domestic interest rates slowed the pace of capital inflows in 1996.

41.   In reaction to signs of overheating by 1997, the NBP raised nominal interest rates (with real interest rates climbing to nearly double-digit levels) and boosted reserve requirements in an attempt to stem the rapid expansion of domestic credit. Capital inflows picked up again. In mid-1997, following the Czech and Thai currency crises, Polish stock and currency markets tumbled, then rebounded smartly as investors refocused on the country's rapid economic growth and declining inflation. This pattern was repeated after the events in Korea in the fall of 1997. Thus, Poland weathered a series of external shocks and, indeed, became one of the favored destinations for emerging market investors.[4]

42.   With high yields on Polish treasury securities,[5] continued strong macroeconomic fundamentals, and a decline in Poland's credit risk, capital inflows accelerated further in early 1998. Sterilization of the inflows contributed to the persistence of high interest rates, which further stimulated capital inflows.[6] Moreover, with inflation falling faster than nominal interest

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[4] Nevertheless, it was estimated that, during the peak of the crisis in Korea in the fall of 1997, approximately half of the foreign money in the stock market fled.

[5] Nonresidents were buying about half of all government securities on the primary market in the first half of 1998.

[6] Open market operations were being conducted with the NBP's own bills.

rates, real interest rates edged upward, which contributed to a slowdown in economic activity in the latter part of the year. With reserve requirements at high levels,[7] the NBP could not consider another hike in obligatory reserves to assist in sterilizing the impact of the inflows.

43.   In February 1998, as the zloty pushed toward its upper limit, the newly created Monetary Policy Council (RPP) widened the fluctuation band from ±7 percent to ±10 percent. Nevertheless, the zloty continued to experience strong appreciation pressures, moving toward its new upper limit. In an effort to stem the upward pressure, the RPP cut its key intervention interest rate by 850 basis points during the period from April 1998 to the end of the year. The RPP also slowed the crawling peg's monthly rate of depreciation progressively from 1 percent to 0.5 percent. The RPP's interest rate and crawl rate cuts partially offset one another in terms of the impact on the attractiveness of the zloty.

44.   The strong inflows continued in mid-1998, with the zloty reaching successive record highs in August, breaking through the 9 percent "psychological barrier" above parity. However, profit-taking and nervousness in the face of escalating turbulence in Russian financial markets knocked the zloty off its perch near the top of its ±10 percent trading band.

The Russian crisis

45.   In contrast to the financial crisis in Asia, Poland's geographical proximity placed it at greater risk of contagion from the Russian financial crisis which began in the summer of 1998. With respect to the three primary transmission mechanisms of contagion effects—trade exposure, financial markets and corporate sector exposure, and increased cost of financing—Poland was on fairly firm ground. Regarding trade exposure, the share of trade with Russia and the other countries of the former Soviet Union amounted to less than 20 percent. Direct banking sector exposure to Russia was relatively small. While the crisis initially triggered a jump in the spread on dollar-denominated Polish Treasury paper, the spread has since declined to almost pre-crisis levels (Figure 2).

46.   In the wake of the Russian devaluation and de facto debt default in mid-August 1998, a massive withdrawal of foreign investors from Polish securities briefly pushed the zloty down to below parity.[8] Of the US$4–5 billion in foreign investor holdings of government securities, it is estimated that approximately US$1 billion exited the country. Substantial sums also departed from the equity markets, with the main index on the Warsaw stock exchange

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[7] Reserve requirements stood at 20 percent, 11 percent, and 5 percent on zloty demand, zloty time, and foreign currency deposits, respectively.

[8] Nevertheless, the NBP refrained from intervening to defend the currency, emphasizing that the weakening would be only a temporary phenomenon and that Poland's strong economic fundamentals would prevail in the longer term.

**Figure 2. Poland: Interest Rate Spread Between
Poland 2-Year Treasury Bond and U.S. 2-Year Treasury Bond, 1997-99**
(In basis points)
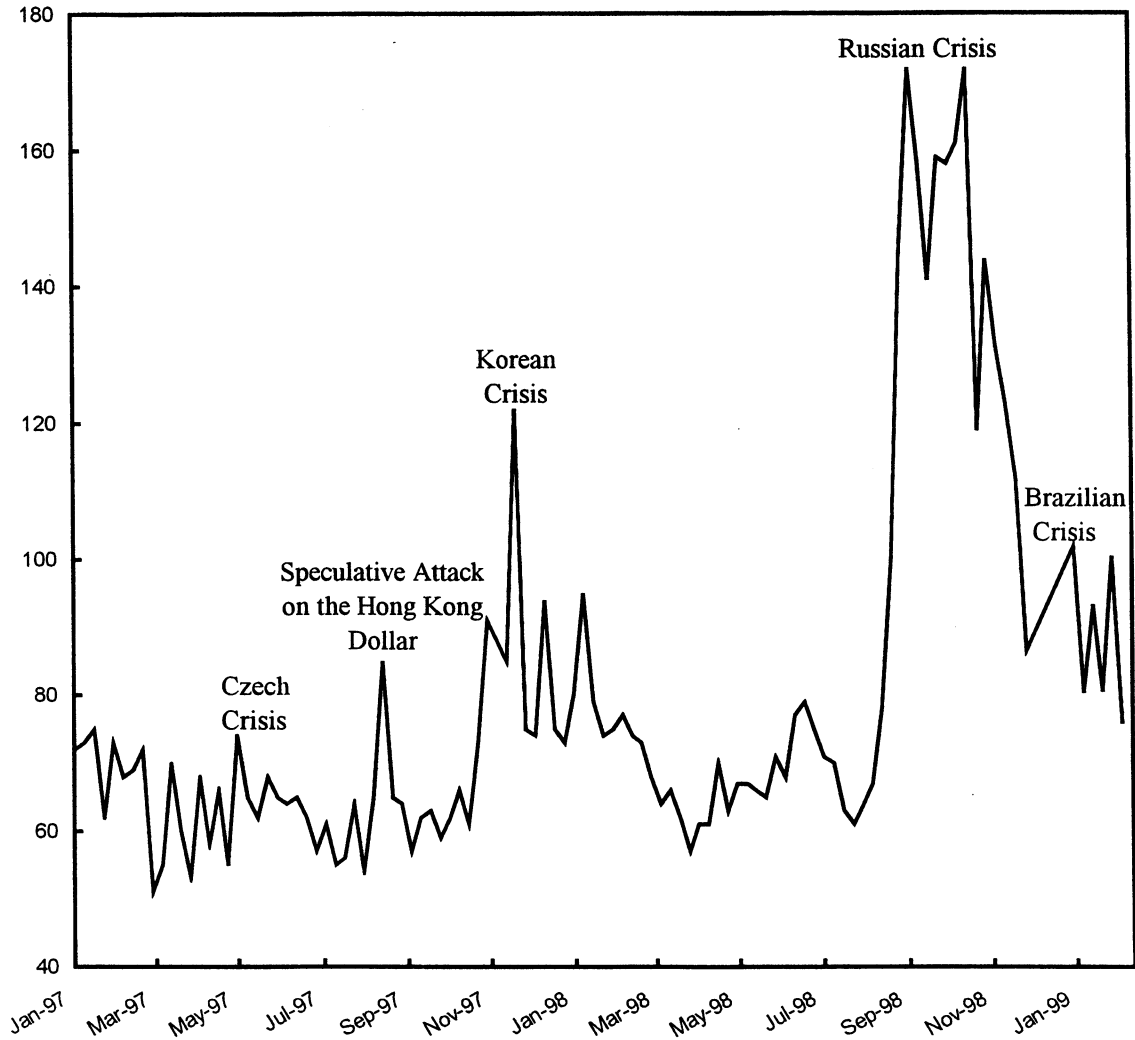
Sources: Polish authorities and staff calculations.

declining by more than 30 percent from end-July until it started to recover toward the end of the year. It was apparent that the withdrawals also reflected redemptions from the more liquid emerging markets to meet investors' needs to cover positions as a result of the Russian crisis; the relatively high liquidity of the Polish markets and the high share of Poland in emerging market investors' portfolios made it an attractive market to tap. Indeed, the fairly quick rebound in Poland's financial markets suggested that the sell-off was primarily liquidity-driven rather than based on fundamentals.

47.　　In early September, the RPP cut the floor of its benchmark interest rate, a move that surprised most market participants, who had expected that the central bank's stance would remain unchanged in the midst of the ongoing turmoil in emerging markets. This action was intended to differentiate Poland from Russia and to send a signal that Poland should be judged on its own strong fundamentals. In the event, the markets reacted favorably to the cut, with the zloty strengthening in the aftermath. In late October, the RPP widened the exchange rate band again, to ±12.5 percent.

48.　　Notwithstanding the more flexible exchange rate, foreign exchange reserves increased rapidly in 1998, rising from US$20.7 billion at end-1997 to US$27.4 billion by end-1998. This development was attributed largely to the functioning of the NBP's fixing, rather than to deliberate intervention on the part of the central bank. In fact, exchange market intervention was sharply curtailed after February 1998, and by the time of the Russian crisis, the NBP had, for all practical purposes, ceased intervening actively on the market. However, the fixing had tied the NBP's hands in controlling its official reserves, and the strong inflows were translated immediately into growth in reserves.[9]

49.　　Following the crisis in Brazil in January 1999, Poland's financial markets again shuddered, but the recovery was far more rapid than in the aftermath of the Russia upheaval. The zloty rebounded within days to around 7 percent above parity. Amid signs of slowing economic activity and concerns about deteriorating competitiveness, the RPP cut its key interest rates by 200–300 basis points on January 20, 1999. This removed the upward pressure on the zloty, and by February, the currency was trading in a range of only 1–3 percent above parity.

Current issues

50.　　Sterilization through open market operations has been very costly for the NBP, as it has involved a portfolio reallocation in which the central bank's domestic currency debt (NBP bills with a relatively high yield) has been issued in exchange for international reserve assets at

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[9] The NBP changed the fixing in December 1998 by creating a bid-offer spread on its fixing transactions that exceeded that typically offered on the interbank market. Previously, the bid and offer rates were the same, making it more attractive than the interbank market for closing banks' foreign exchange positions.

a much lower yield. The quasi-fiscal costs of sterilization have led to a significant deterioration in the NBP's profit position and have contributed to the difficulties of reducing the high reserve requirements currently imposed on banks. With the opening of the banking system to greater foreign competition in the run-up to EU membership, such reserve requirements may lead to substantial disintermediation. The NBP is currently in negotiations with the government to convert a large stock of nonmarketable government debt on its balance sheet into a form that can be used in open market operations. This would relieve the NBP of the quasi-fiscal burden of sterilization and might allow the central bank to lower its reserve requirements to a level compatible with a more competitive banking environment.

51.   A new foreign exchange law took effect in January 1999. Although some restrictions remain in place, particularly as regards short-term capital flows, the law is a step in the direction of a more liberalized capital account and formally makes the zloty an externally convertible currency. The law also makes it possible to impose special restrictions in emergency situations such as those caused by excessive capital movements.[10] The law is intended only as the first step to liberalizing the capital account since Poland's commitment to the OECD requires that it fully liberalize the capital account by January 1, 2000.[11]

C. The Composition of Capital Flows to Poland[12]

52.   The major components of Poland's financial account are FDI, portfolio investment, medium- and long-term credits, short-term credits, and "other" financial transactions. This last category includes transactions in foreign currency held in bank vaults, current accounts, deposits placed abroad, and deposits accepted from abroad (including repurchase agreements). Figure 3 illustrates the size and composition of capital flows to Poland, on a quarterly basis, since 1995, when the surge in inflows began.

Four distinct periods

53.   Since 1991, there have been four distinct periods for capital flows to Poland (Figure 4). The first period—early transition—occurred during 1991–92 when amortization due for medium- and long-term loans was the overriding feature of the financial account. During this period, Poland was running up large arrears. The next period—debt rescheduling on the horizon—was 1993–94, when the financial account was almost in balance and there was a minor amount of FDI entering the country.

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[10] Emergency situations include a major decrease in reserves, a sharp deterioration in the balance of payments, an increase in the money supply caused by rapid inflows of foreign capital, or a threat to the stability and integrity of the financial system.

[11] Poland became a member of the OECD in November 1996.

[12] See appendix on the limitations and deficiencies of capital flow data for Poland.

Figure 3. Poland: Size and Composition of Net Capital Flows, 1995-98 1/

Size of Net Capital Flows
(In millions of U.S. dollars)
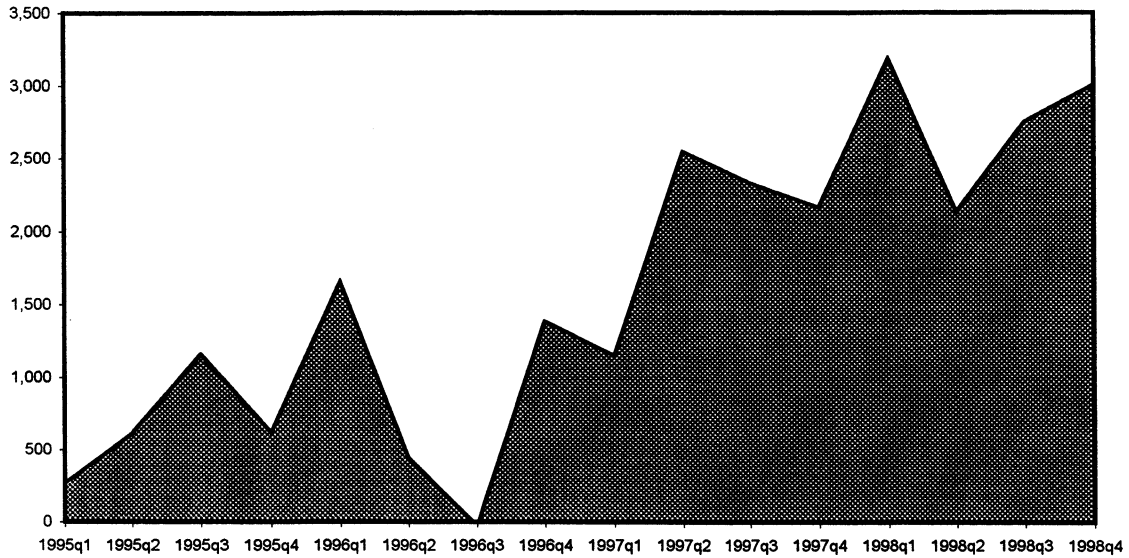
Composition of Net Capital Flows
(In percent)

- Other financial transactions
- Short term capital
- MLT capital
- Portfolio investment
- FDI
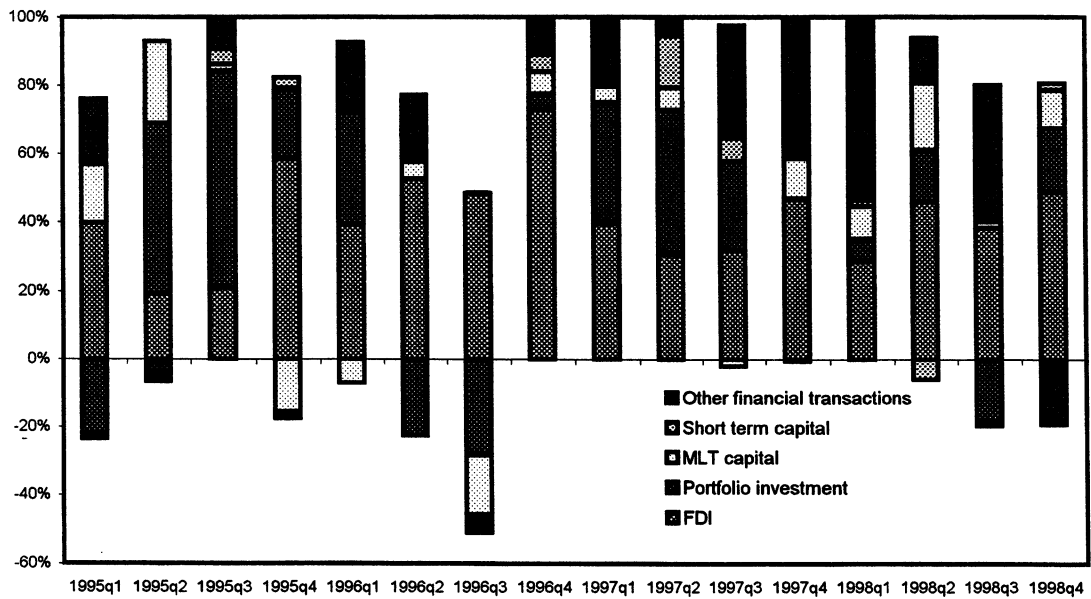
Sources: National Bank of Poland

1/ Excluding net errors and omissions and valuation adjustments.

Figure 4. Poland: Four Periods of Capital Flows
(Cumulative net flows during period; in millions of U.S. dollars)

1991-1992	1993-1994	1995-1996	1997-1998
Early transition	Debt rescheduling	Maturing transition	EU prospects

Legend:
- ▨ Medium and long-term capital
- ▦ Direct investment
- ▨ Portfolio investment
- ⁑ Short term capital
- ▤ Other financial transactions
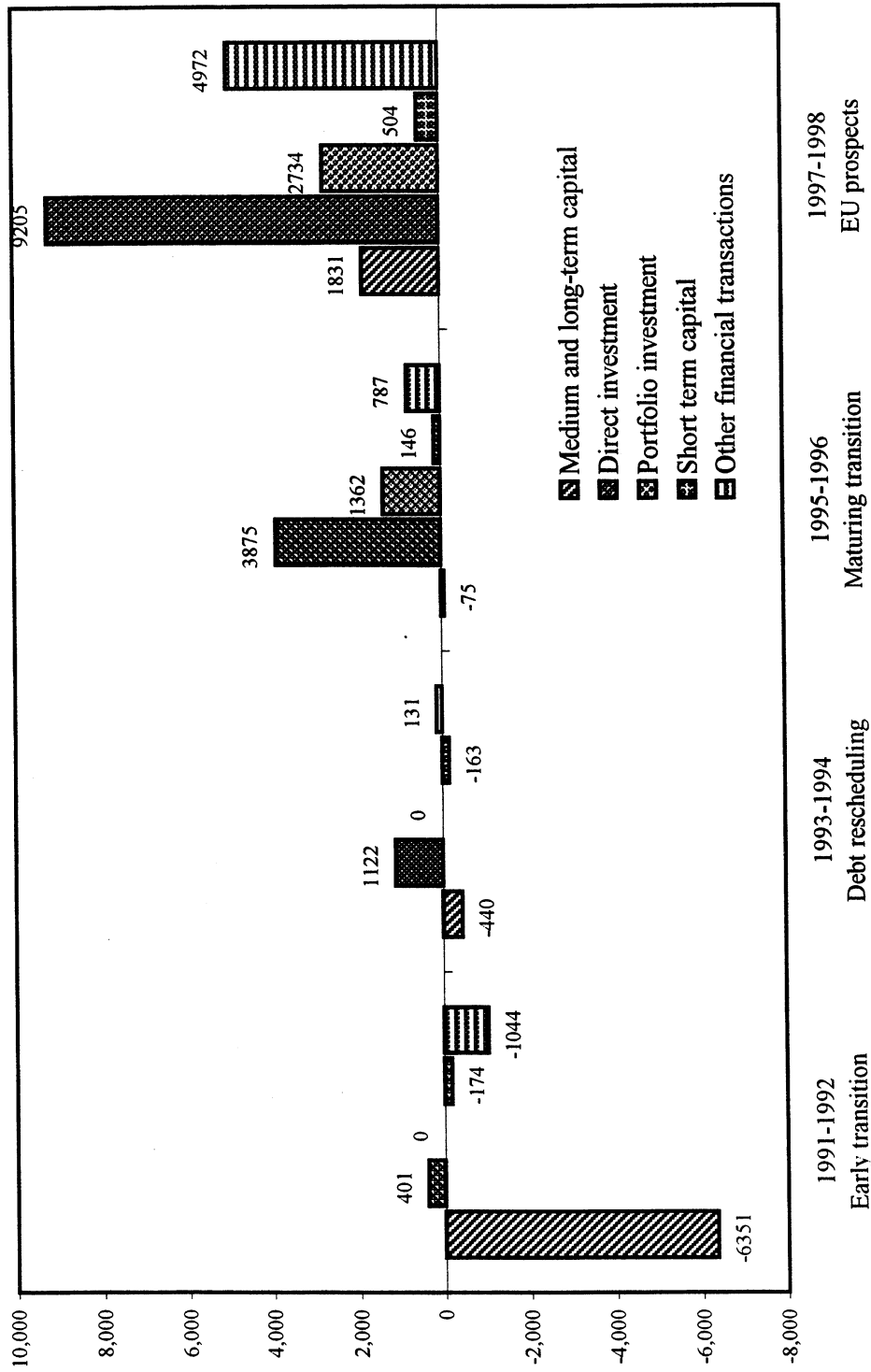
Source: National Bank of Poland

54.   The London Club agreement in October 1994 appeared to be the catalyst for a major acceleration in capital inflows in the third period—maturing transition—of 1995–96, when FDI inflows became the dominant feature in capital flow developments.[13] In the most recent period of 1997–98, with EU membership now in sight, FDI inflows accelerated further, as Poland became one of the favored destinations for emerging market investors.[14] Also notable during this last period was a sharp rise in the category of other financial transactions. In particular, there was a large drawdown of Polish residents' assets abroad at the same time that there was a pick-up in nonresidents' acquisition of currency and deposits in Poland, perhaps in response to the high interest rates offered on domestic currency deposits.

Non-FDI capital inflows

55.   Over the entire period 1991 to 1998, net cumulative flows of medium- and long-term credit were negative (with a net outflow over this eight-year period of about US$5 billion) if amortization due is used for the computation of net flows. However, if actual repayments are used to compute net flows, then there was a cumulative net inflow of US$3 billion over this period. Cumulative disbursements reached approximately US$8.5 billion by end-1998. During the early years of transition, the government was the primary borrower, but by 1995–96 the banking and enterprise sectors began to account for the majority of longer-term borrowing abroad. Reflecting this shift in type of borrower was a similar shift in type of creditor. In the early years, the majority of these loans were provided by international financial institutions, but their share has declined significantly since 1995.

56.   Concerning recent developments in external borrowing, the Polish government issued some US$400 million in bonds on the international markets in 1998, and the 1999 budget authorizes up to US$700 million in foreign borrowing. Shortly after its initial public offering (IPO) in November 1998 (see below), Telekomunikacja Polska SA (TPSA) successfully accessed external financing via a US$1 billion Eurobond issue, the largest corporate debt issuance ever from the region. Also in November 1998, Krakow, Poland's third largest city, debuted in the municipal bond market with a 2-year DM 66 million note, and the issue was also regarded as a success.

57.   Short-term credits have played a very small role in Poland's capital flow developments throughout the entire period examined in this paper. As of end-1998, the ratio of the stock of short-term external debt to official reserves was less than 13 percent, significantly lower than in most of the other European transition and emerging markets.

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[13] Another important factor was that credit rating agencies gave Poland investment grade ratings in 1995.

[14] In July 1997, the European Commission published its opinion on 11 countries that had applied to join the EU; Poland was included as one of the six best-prepared. EU accession negotiations began in 1998.

58.   Portfolio investment was negligible until the conclusion of the Brady Bond deal in late 1994 and the assignment of investment grade ratings to Poland. In 1995 there was a surge in portfolio inflows, which continued into the first quarter of 1996. This raised concerns about the vulnerability of Poland to a sudden reversal, with the NBP lowering interest rates to stem the inflows of interest-sensitive capital. In the event, portfolio flows tapered off later in the year.

59.   However, by 1997, as the NBP moved to tighten monetary policy to prevent overheating, these inflows resumed, reaching a peak during the second quarter of 1997 (Figure 5). Portfolio inflows to the equity market were relatively stable. Although foreign interest in equity securities was strong, the inflow into Polish treasury securities was even greater and more volatile. In the fourth quarter of 1997, at the peak of the Asian crisis, there was a sharp reversal of flows in debt securities. During the first half of 1998, foreign investors returned to the treasury markets, but the Russian crisis sparked an even greater outflow in the third quarter than that associated with the Asian crisis. In October 1998, inflows into debt securities just barely edged into positive territory again, and remained at a low level in November. However, in December 1998, almost US$1 billion flooded back into the debt market, the largest monthly inflow ever into Polish securities. Note that inflows to the equity market remained positive on a net quarterly basis, even at the peak of the crises in Asia and Russia, until the fourth quarter of 1998.[15]

60.   Despite the obvious foreign interest in Polish debt and equity markets, portfolio flows have not been one of the major components of foreign financing for Poland. This may reflect, in part, the relatively low level of financial development. As a proxy for financial development, consider the ratio of broad money to GDP in Poland. At end-1998, the ratio was about 40 percent. By comparison, the figure for the Czech Republic, which has been the recipient of large portfolio flows, was about 70 percent.

Developments in foreign direct investment

61.   The bulk of Poland's financing of its rising current account deficits has come in the form of FDI. In fact, over the past two years, cumulative net FDI inflows (based on data from the NBP) have almost fully financed the cumulative current account deficit (Figure 6). For a more detailed examination of developments with respect to FDI, data from the Polish Agency for Foreign Investment (PAIZ) must be used. Data from PAIZ differ significantly from those prepared by the NBP for the balance of payments statistics. According to PAIZ data,

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[15] Monthly data, however, indicate that equity flows were negative during July and August 1997 (the Thai crisis), again in November 1997 (the Korean crisis), and again during August, September, and October 1998 (the Russian crisis). Inflows resumed in November 1998, but then reversed just as suddenly in December 1998.

Figure 5. Poland: Nonresidents' Portfolio Investment, 1997-98
(In millions of U.S. dollars)
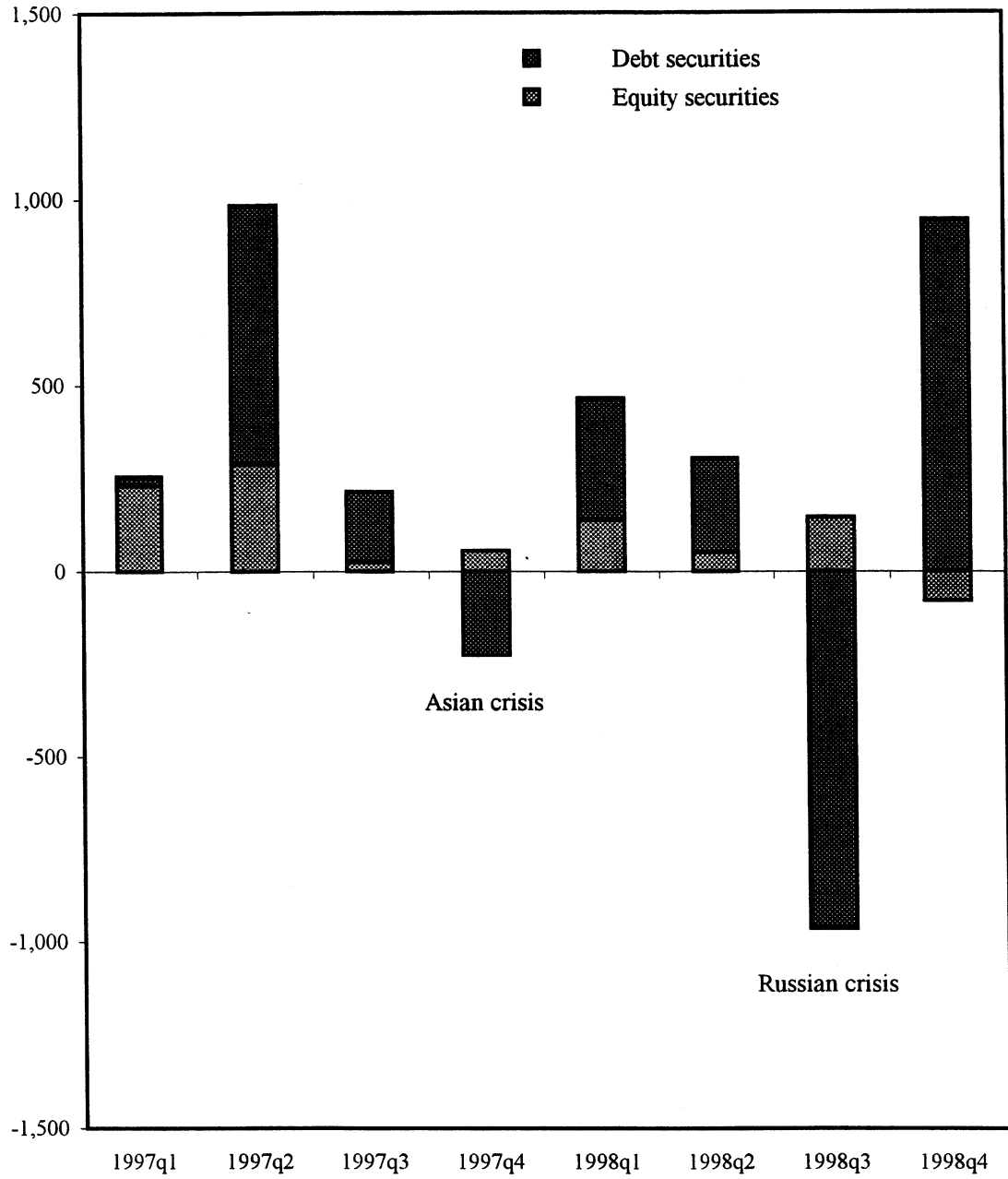
Source: National Bank of Poland

Figure 6. Poland: Foreign Direct Investment Financing
of the Current Account Deficit, 1996-98
(In millions of U.S. dollars)
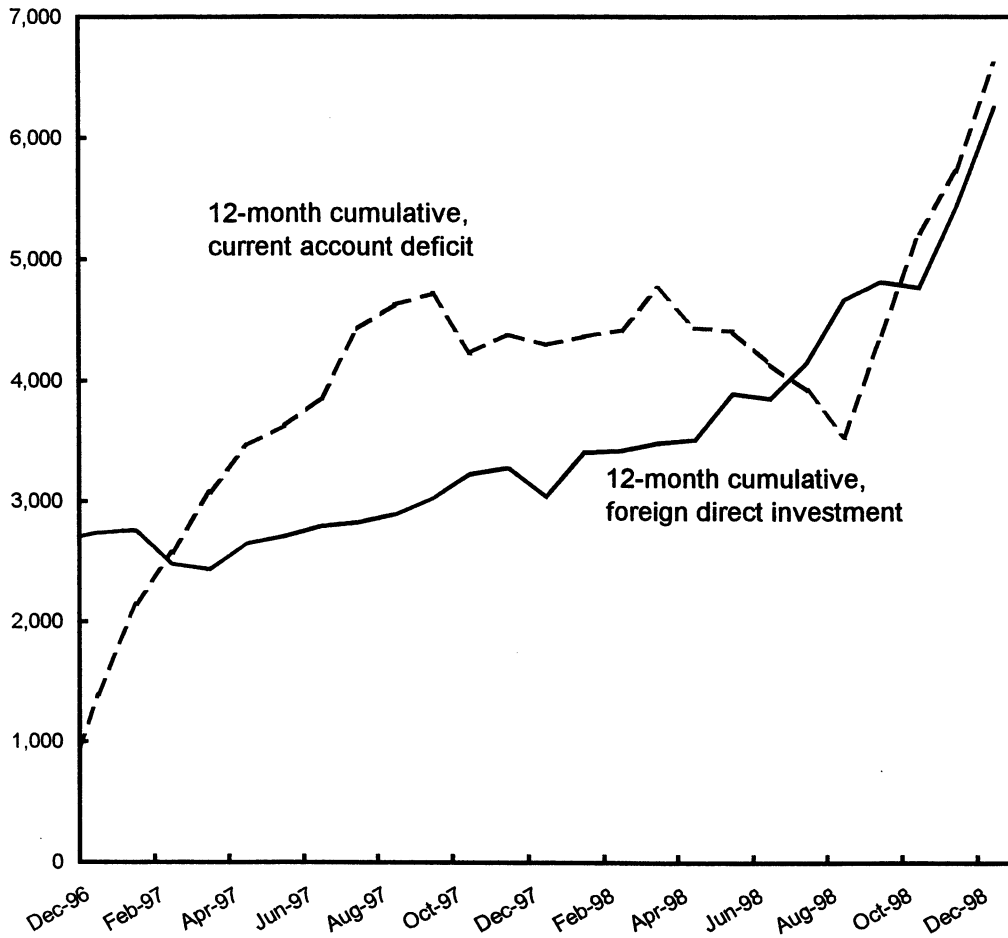
Source: National Bank of Poland.

US$5.2 billion was invested by nonresidents in Poland during 1996, the largest amount in the transition economies in Central and Eastern Europe. This increased to US$6.6 billion in 1997, bringing the stock of FDI to US$20.6 billion by end-1997, which exceeded the stock in Hungary (previously the recipient of the largest cumulative inflows of FDI).[16]

62.   As of June 1998, the total stock of foreign direct investment in Poland was US$25.6 billion, of which projects with investment exceeding US$1 million represented US$22.5 billion. There were 638 investors (from 31 countries), up from 585 and 492 at end-1997 and end-1996, respectively. The United States was the largest investor in terms of value (with 21 percent of the FDI stock in Poland), followed by Germany (14 percent), and international organizations and companies (e.g., EBRD, IFC, or multi-country investment concerns) (Table 1 and Figure 7). European Union countries had invested US$12.2 billion or 54 percent of the total stock. Asian investors, on the other hand, had invested only US$1.5 billion, or less than 7 percent. Korea was by far the largest Asian investor, accounting for US$1.3 billion, while Japan had invested less than US$180 million and ranked 17th among the investing countries.

63.   Plans as of June 1998 call for additional investment of US$13.1 billion, or more than 50 percent of the current stock.[17] Again, the largest value of planned investments is attributed to the United States (25 percent). In terms of number of investors, Germany takes the lead with 141 investors, followed by the United States with 96.

64.   Despite the advent of the Russian crisis in August 1998, foreign direct investors continued to make transfers into the Polish economy in the second half of 1998. The total amount of FDI inflows to Poland in 1998 is estimated at a record US$10.1 billion, of which US$5.1 billion occurred in the latter half of the year.[18] Inflows in 1998 were up by more than 50 percent compared with the previous year. The stock of FDI by end-1998 (accumulated since 1989) stood at US$30.7 billion.

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[16] Among the transition economies, Hungary, in second place, had US$17 billion of FDI by end-1997 and Russia, in third place, had US$10 billion.

[17] Since the survey on these planned investments was conducted in June 1998, prior to the Russian crisis, it is difficult to know whether these plans will be downscaled in the aftermath. For example, the problems in Russia and the former Soviet Union (FSU) could reduce, at least temporarily, the attraction of Warsaw as a regional headquarters for firms doing business with the FSU.

[18] Balance of payments data from the NBP suggest that FDI inflows picked up sharply in the second half of 1998. While inflows in the first half amounted to US$2.0 billion, inflows more than doubled in the second half to US$4.1 billion. Moreover, according to the NBP data, FDI inflows in 1998 more than doubled from those in 1997, an even more dynamic picture than that based on the PAIZ data.

Table 1. Poland: Stock of Foreign Direct Investment
Countries of Origin

(As of June 1998)

Rank Order	Country	Equity & Loans	Investment Plans	Number of Companies
		(In millions of U.S. dollars)		
1	United States	4,696.6	3,338.7	96
2	Germany	3,230.3	1,837.5	141
3	International 1/	1,896.6	751.3	18
4	Italy	1,865.7	1,091.3	61
5	France	1,845.1	1,560.8	53
6	Great Britain	1,797.2	641.4	29
7	South Korea	1,271.9	416.1	4
8	Netherlands	1,163.1	365.5	34'
9	Russia	834.0	826.1	1
10	Austria	759.1	174.1	32
11	Sweden	618.7	175.8	35
12	Switzerland	596.6	274.0	12
13	Denmark	389.4	246.8	25
14	Norway	369.2	439.0	10
15	Ireland	194.1	11.4	3
16	Finland	184.7	52.2	16
17	Japan	178.4	208.3	11
18	Croatia	138.0	70.0	1
19	Belgium	133.9	131.1	18
20	Canada	93.0	14.1	18
21	Australia	70.1	82.0	3
22	Czech Republic	67.4	0.0	3
23	Liechtenstein	29.5	12.0	3
24	South Africa	25.0	40.0	1
25	China	25.0	25.0	1
26	Turkey	23.0	60.0	2
27	Singapore	13.0	60.0	1
28	Slovenia	6.0	1.0	1
29	Taiwan	5.7	200.0	1
30	Spain	5.0	0.0	1
31	Greece	3.6	4.0	2
32	Luxembourg	2.3	0.0	1
	Total 2/	22,531.2	13,109.5	638

Source: PAIZ.

1/ Includes international organizations (e.g., EBRD, IFC) and
    multi-country investment concerns.
2/ Includes only FDI projects over $1 million.

Figure 7. Poland: Stock of Foreign Investment, Countries of Origin

(As of June 1998)

Investment (Equity and Loans)

United States
21%

Other
41%

Germany
14%

International
8%

France
8%

Italy
8%

Investment Plans

United States
25%

Other
35%

Germany
14%

France
12%

Italy
8%

International
6%
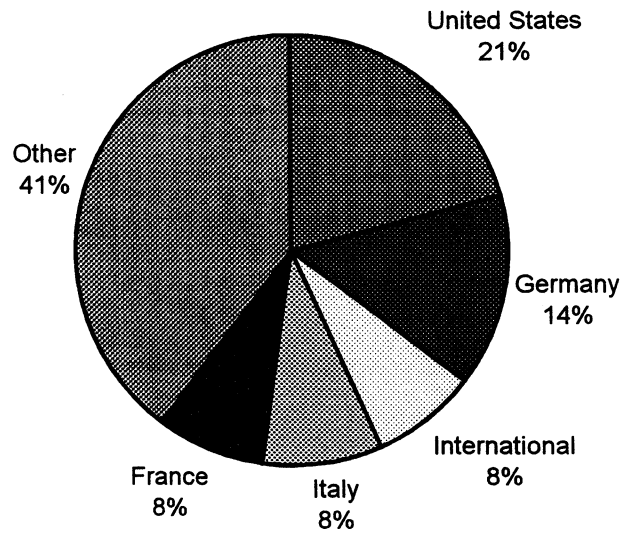
Source: PAIZ

65.   Manufacturing was the destination for 59 percent of all cumulative foreign direct investment in Poland as of June 1998 (Table 2 and Figure 8). Within the manufacturing category, the food products sector was the major recipient, followed closely by transport equipment. The next largest sectoral destination for investment, after manufacturing, was financial intermediation, which received 16 percent of total cumulative FDI. Using survey data on plans for future investment, manufacturing is expected to continue to receive the lion's share, at 48 percent, but wholesale and retail trade moves into second place, accounting for 21 percent of planned investment, up from only 10 percent of investment to date.

66.   Table 3 presents the top 30 investors in Poland as of June 1998. The largest foreign investors in the Polish economy have been car manufacturers, particularly Fiat and Daewoo.[19] The car industry has been attracted by Poland's low labor costs, the country's prospect of admission to the EU, and a good geographical location. Car manufacturers currently plan to produce a million or more cars in Poland in the near future. The demand in Poland, on the other hand, is estimated at about 700,000 cars by the year 2000, including significant numbers of imported vehicles. Thus, the car manufacturers appear to be focusing on both the domestic and export markets. Currently, only Fiat and Daewoo produce cars with a Polish content of at least 65 percent, as much of the car manufacturing in Poland involves assembly plants using semi-knocked down imported kits. This approach to car manufacture has created relatively few ne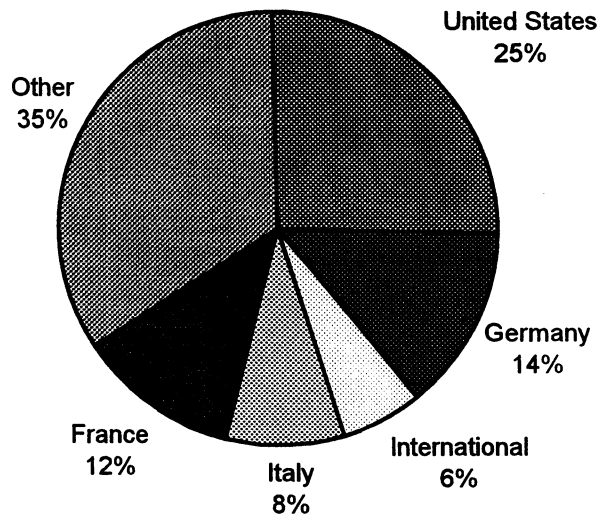w jobs and is low value added. Poland is now trying to encourage the development of car manufacturing with a larger Polish content and is proposing to raise tariffs on components used to assemble cars. The third largest investor in Poland, after Fiat and Daewoo, is the Russian gas company, Gazprom. In June 1998, Gazprom had plans to invest again almost as much as it had already invested in Poland. Survey data are not yet available to determine whether these plans have been derailed by the Russian financial crisis.

67.   By 1997, about 13 percent of all Polish companies had foreign strategic investment. Such companies have played an increasingly important role in total expenditure on investment and in foreign trade.[20] In 1994, these companies accounted for only 12 percent of total investment spending, but this share rose steadily, to 16 percent in 1995, 20 percent in 1996, and about 25 percent in 1997 (in manufacturing, the share in 1997 was greater than 45 percent). Companies with foreign participation also contributed heavily to foreign trade, with their share in exports rising from 25 percent in 1994 to 43 percent in 1997, while their share in imports increased from 33 percent to 50 percent during the same period.

68.   While the export-to-sales ratio, at 14 percent in 1996, was significantly higher than the 9 percent for domestically owned firms, this ratio declined from 16 percent in 1994 and 15 percent in 1995, reflecting a shift in foreign investment oriented toward the domestic

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[19] In fact, prior to 1995, the only substantial foreign investment project was Fiat's investment in Bielsko, Poland.

[20] *Polish News Bulletin*, July 31, 1998 (based on *Prawo i Gospodarka*, July 28, 1998).

Table 2. Poland: Stock of Foreign Direct Investment by Sector

(As of June 1998; in millions of U.S. dollars)

Branch	Equity & Loans	Percent of total	Investment Plans	Percent of total
Manufacturing	13,310.1	59.1	6,291.9	48.0
of which:				
food product, beverages and tobacco products	3,599.6	16.0	1,272.8	9.7
transport equipment	3,090.4	13.7	2,223.7	17.0
chemicals, chemical products	1,530.4	6.8	706.6	5.4
other non-metallic products	1,483.7	6.6	798.8	6.1
pulp, paper, paper products, publishing, printing	1,362.3	6.0	350.9	2.7
electrical and optical equipment	674.0	3.0	198.1	1.5
rubber products	405.8	1.8	230.3	1.8
basic metals and metal products	385.5	1.7	207.8	1.6
Financial intermediation	3,713.5	16.5	393.0	3.0
Wholesale and retail trade, repairs	2,161.8	9.6	2,760.7	21.1
Construction	1,461.2	6.5	1,510.2	11.5
Transport and communication	869.1	3.9	327.9	2.5
Other services: communal, social and individual	342.2	1.5	225.0	1.7
Hotels and restaurants	338.8	1.5	429.3	3.3
Electricity, gas and water supply	228.8	1.0	1,040.0	7.9
Real estate, renting and business activities	53.5	0.2	123.5	0.9
Mining and quarrying	29.2	0.1	0.0	0.0
Agriculture	23.0	0.1	8.0	0.1
Total foreign direct investment over $1 million US	22,531.2	100.0	13,109.5	100.0

Source: PAIZ

Figure 8. Poland: Stock of Foreign Investment by Sector
(As of June 1998)

Investment

Transport and communication 4%
Other 5%
Construction 6%
Trade 10%
Financial intermediation 16%
Manufacturing 59%

Investment Plans

Utilities 8%
Other 8%
Construction 12%
Trade 21%
Financial intermediation 3%
Manufacturing 48%
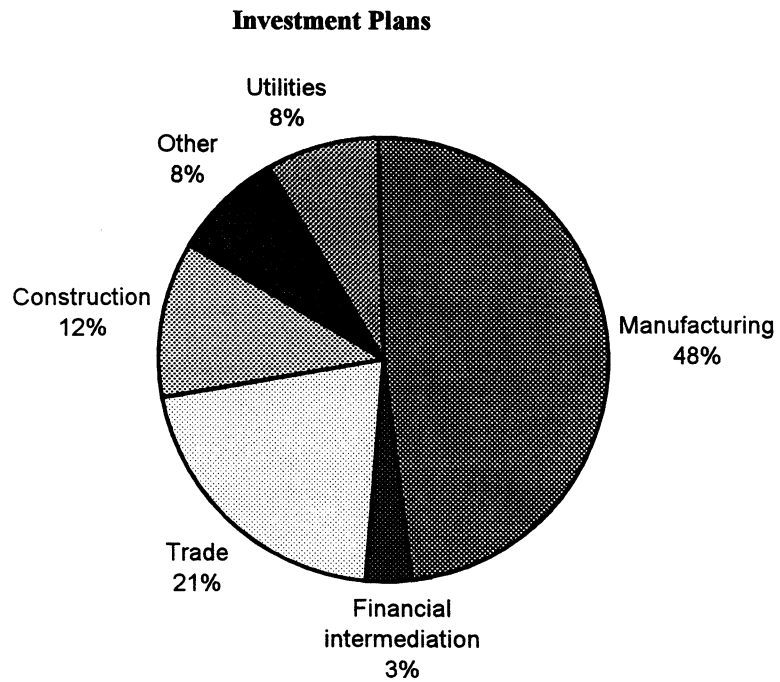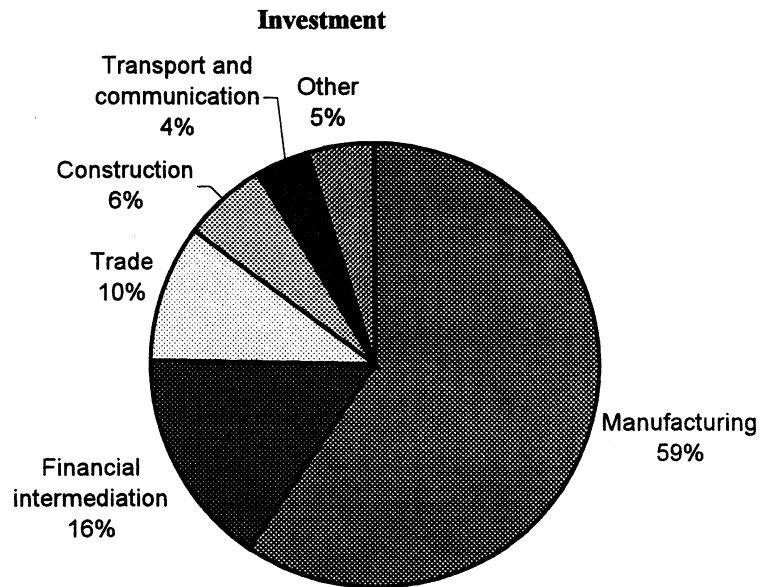
Source: PAIZ

Table 3. Poland: List of Top 30 Foreign Investors 1/
(As of June 1998)

Investor	Equity & Loans	Plans	Origin	Branch
	(In millions of U.S. dollars)			
Fiat	1247.8	708.8	Italy	manufacture of cars
Daewoo	1207.9	390.9	Korea	car production, electronic equipment, construction, insurance
Gazprom	834.0	826.1	Russia	construction
EBRD	653.5	216.0	International 2/	banking, capital participation in enterprises
Metro AG	537.4	650.0	Germany	wholesale and retail trade
Polish American Enterprise Fund	510.0	0.0	USA	capital funding of private firms and participation in privatization
ING Group	420.0	0.0	Netherlands	banking
PepsiCo	412.0	380.0	USA	sweets, soft drinks, crisps
IPC	370.0	0.0	USA	paper industry
Coca-Cola Beverages	350.0	0.0	Great Britain	soft drinks production
ABB	310.2	216.9	International 2/	power supply systems, turbines, electric engines
Reemtsma Cigaretten- fabriken GmbH	307.0	15.0	Germany	tobacco industry
General Motors	303.0	600.0	USA	car assembling
Nestle	300.0	0.0	Switzerland	food processing
Pilkington	295.0	50.0	Great Britain	glass plant
Philip Morris	282.0	80.0	USA	tobacco industry
IFC	277.3	0.0	International 2/	investment in private sector projects across all industry sectors
Commerzbank AG	268.9	0.0	Germany	banking
Saint Gobain	250.0	150.0	France	glass, insulating material production, construction
France Telecom	232.0	0.0	France	telecommunications
Glaxo Wellcome	230.4	0.0	Great Britain	pharmaceuticals
Lafarge	209.0	141.0	France	cement production
British Petroleum	200.0	300.0	Great Britain	gas production, distribution of oil products
Citibank	200.0	0.0	USA	banking
Epstein	200.0	0.0	USA	construction, development, meat processing
Thomson Multi Media	185.0	0.0	France	TV tubes and sets
Kronospan	179.2	124.0	Switzerland	paper products, furniture products
Framondi	175.0	0.0	Austria	paper industry
Heidelberger Cement- CBR	168.0	0.0	International 2/	cement production
Allied Irish Bank PLC	164.7	0.0	Ireland	banking

Source: PAIZ

1/ Ranked by book value of capital.
2/ Includes international organizations (e.g., EBRD, IFC) and multi-country investment concerns.

market. Thus, foreign direct investment has been increasingly oriented toward the services sector, particularly financial intermediation, retail and wholesale trade, transport and communications, and construction. Nevertheless, manufacturing still accounts for the largest share of foreign investment and contributes most substantially to export growth.

Motivation for foreign direct investment

69.   The sectoral destinations give some indication of the reasons for foreign direct investment in Poland. The reasons for FDI can be roughly characterized as: market-seeking, cost-seeking, efficiency-seeking, and natural resource-seeking. The cost-seeking motive is most obviously present in investments like car assembly with imported kits, where the major purpose would be to employ low cost, low skill labor and exploit Poland's advantageous location for exporting to the other regional economies. However, it appears that a growing percentage of FDI is of a market-seeking nature, particularly for investments in the nontradable sector (financial intermediation, wholesale and retail trade, other services, etc.) Moreover, as noted above, the export-to-sales ratio has been declining, again signifying a shift toward the market-seeking motive. It is difficult to assess how much investment is based on the efficiency-seeking motive, but Poland does have an attractive combination of a well-educated labor force and low relative wages. For Poland, unlike a number of the FSU transition economies, the natural resource-seeking motive would be relatively negligible, particularly since the mining industry, for the most part, has not yet been privatized and will require massive restructuring.[21]

The role of privatization

70.   In Hungary and the Czech Republic, privatization was one of the major factors that attracted strong capital inflows in the previous years. Poland, on the other hand, was a latecomer to privatization relative to the other advanced transition economies. Privatization-induced FDI has been estimated at only about 20 percent of all FDI inflows, and many enterprises remain in state hands, ranging from steel and petrochemical giants to small vodka producers and Arabian horse farms.

71.   In recent months, the environment for privatization has been unsettled by the global financial turmoil, but the Polish government went ahead with plans in the fall of 1998 to launch an IPO for TPSA. Orders were oversubscribed; demand from foreign investors, in particular, was 2½ times the supply. As a result of the TPSA IPO and the sale of a significant stake in Bank Przemyslowo-Handlowy, inward FDI flows in November 1998—at US$952 million—were the largest in any month since transition began, and December's inward FDI flows set a new record again—at almost US$1.2 billion.

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[21] However, demand for shares was higher than expected when the government privatized part of Poland's giant copper and silver producer, KGHM Polska Miedz, in 1997.

Volatility of capital flows

72.   The volatility of capital flows is an important vulnerability factor. High volatility can contribute to an unstable economic environment, which is not conducive to steady development. For most countries, the volatility of FDI is usually lower than that for portfolio flows.[22] Some of the reasons underlying the greater stability of FDI include a longer-term investment perspective as well as greater difficulty in selling or dissolving a strategic shareholding. Portfolio flows, on the other hand, are more likely to respond quickly to changes in sentiment, arbitrage opportunities, or other short-term fluctuations in financial markets. Moreover, portfolio flows are the component of capital flows most likely to suffer from contagion in other markets, as portfolio investors are more inclined toward herding behavior.

73.   For Poland, during the period 1995 through 1998, the coefficient of variation[23] for net capital flows overall was 0.7 (Table 4). In line with the discussion above, the different components vary significantly with respect to their coefficients of variation. Thus, the volatility of net FDI flows is the lowest, followed by that for "other financial transactions." The heavy weight of FDI accounts for the relatively low volatility overall of capital flows to Poland. The remaining components of the financial account are more volatile, with volatility rising in order from medium- and long-term credit,[24] portfolio flows, and short-term credit.

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[22] In a study by UNCTAD (1998), the coefficient of variation of FDI was lower than that for portfolio flows for most developing countries during the period 1992–97. However, Korea, Brazil, and Chile were exceptions, with FDI exhibiting greater volatility than portfolio investment. In Chile, for example, capital controls imposed on short-term capital flows might account for the lower volatility of portfolio flows.

[23] The coefficient of variation is the standard deviation divided by the mean, computed using quarterly data from 1995 to 1998.

[24] The primary components of this net flow (disbursements and amortization) exhibit much lower volatility (1.0 and 0.8, respectively) than on a net basis because the amortization payments and the disbursements occur "out of sync."

Table 4. Volatility of Capital Flow Components, 1995–98

	Coefficient of Variation	Weight in Total Net Flows [1]
Foreign Direct Investment	0.7	49.9
Portfolio Flows	1.9	15.6
Medium/Long-Term Credit	1.9	6.7
Short-Term Credit	2.7	2.5
Other Financial Transactions	1.8	22.0
Financial Account	0.7	100.0

[1] Weights do not add to 100 because the financial account includes errors and omissions.

74.   In using balance of payments data for FDI, it is important to recognize that these data, according to the IMF's definition, include three categories: equity capital (which corresponds roughly with new investment); reinvested earnings (earnings of an overseas affiliate are regarded as exports of a service by the home country, and that which is retained by the host country is treated as a capital inflow); and intra-company debt flows. Thus, FDI data may well overstate the amount of "stable" equity investment. Data are not usually available on the maturity of intra-company loans, and in Poland there are no restrictions on short-term loans of this nature. These other FDI-related flows may make measured FDI somewhat less stable in a crisis situation.

75.   For Poland, the breakdown of FDI flows into the components above reveals that capital loans have been increasing as a share of total FDI (Table 5). In 1995, when the initial surge in FDI began, loans accounted for only 18 percent of all inflows. The share of loans rose to 24 percent by 1996 and to 36 percent in 1997. This rising trend continued into 1998, with data for the first half indicating that loans constituted about 43 percent of all FDI inflows. Retained earnings, on the other hand, were almost negligible in both 1997 and in 1998.

Table 5: Gross Foreign Direct Investment Inflows, 1991–97

(In millions of U.S. dollars)

	1991	1992	1993	1994	1995	1996	1997
Inward FDI	359	678	1,715	1,875	3,659	4,498	4,908
Equity capital	268	433	1,109	1,096	2,105	3,159	3,116
Of which:							
In kind	91	135	217	212	298	314	453
Reinvested earnings	66	154	199	382	888	244	25
Loans	25	91	407	397	666	1,098	1,767
FDI Stock	425	1,370	2,307	3,789	7,843	11,463	14,587
Equity	N.A.	1,135	1,661	2,840	6,130	8,697	10,125
Other capital	N.A.	235	646	949	1,713	2,766	4,462

Source: National Bank of Poland.

76.   Poland's total external debt stock would be higher by more than 10 percent if the stock of FDI-associated credits were included. The external debt in 1997 and as of June 1998 was US$38.5 billion and US$39.0 billion, respectively, if credits associated with direct investment and trade credits are excluded. With FDI-associated credits included, the debt figures are US$42.8 billion and US$44.2 billion for 1997 and June 1998, respectively.[25]

Prospects

77.   Poland is planning an ambitious program of privatization during the next three years. The government's target for proceeds from privatization in 1999, at Zl 15 billion, is more than twice the amount received in 1998. The government has expressed no preference for either domestic or international investors, noting only that the national treatment rule is applied to the conduct of privatizations. If carried out as planned, this should strongly support continued healthy FDI inflows.

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[25] Note that if trade credits were also included in the debt stock, the figures would each be about US$1.8–2 billion higher.

78.   In 1999 the government is planning to sell majority stakes in a wide variety of enterprises, including LOT (the Polish airline), Bank Pekao SA, two coal mines, six central heating plants, three power plants, two pharmaceutical plants, and Nafta Polska oil company. Furthermore, 25–35 percent of TPSA is planned to be sold to a strategic investor in 1999 (following the 15 percent share sold in the IPO). The first stage of privatization of PZU SA, the national insurance company, is also planned for 1999. The three functions of the energy sector—production, distribution, and transmission—will be separated prior to privatization. Privatization of the production and distribution subsectors will occur first; the transmission subsector will not be privatized until 2000 or 2001. A much more difficult issue is the privatization and restructuring of the steel sector. For the two largest steel mills (Huta Katowice and Huta Sendzimira), work is already underway to prepare for the privatization of their subsidiaries. The EBRD, which invested a record Zl 1.4 billion in Poland in 1998, has said that it is planning to participate in the privatization offers this year, including in such sectors as steel, petrochemicals, aviation, and agriculture.

79.   With respect to portfolio flows, as global markets began to settle down after the Russian crisis, emerging market investors started to turn increasingly to Central and Eastern Europe. Between the beginning of October 1998 and January 1999, Morgan Stanley Capital International's Eastern Europe index exceeded the rise in the index for all emerging markets by more than 20 percent. Poland and Hungary have been the primary countries contributing to this performance.

80.   Many emerging market fund managers have recently been taking larger positions in Central and Eastern Europe, with Poland being one of the foremost recipients of investor interest. Within funds which specialize in the transition economies, Poland and Hungary receive the lion's share of investment today. The transition economies are being viewed increasingly as a two-tier market, with the EU prospective countries clearly favored as strategic opportunities.

81.   The periodical, *Central European* (1998b), conducted a survey of central/eastern European regional fund managers after the Russian crisis to see how their asset allocations were being changed. According to this survey (taken at the end of October), Poland benefited the most from the retreat from Russia. Of the 13 regional funds surveyed, 11 were increasing their weightings of Poland. In contrast, seven were decreasing their weightings for Hungary. The average asset allocation weight given to Poland by these 13 funds was 32 percent, compared with a regional benchmark weight for Poland of 24.5 percent.[26] By comparison, Hungary's benchmark weight—32 percent—was the highest among the regional economies, but the average asset allocation weighting for the 13 funds was 25.2 percent. Further boosting Poland's reputation in international markets, Fitch IBCA decided in November 1998 to upgrade its rating of Poland's foreign debt from triple-B to triple-B-plus, the same rating

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[26] The benchmark weight reflects investment potential based on market capitalization and liquidity, adjusted for stocks with restrictions on foreign investors.

enjoyed by the Czech Republic.[27] Although the Brazil turmoil temporarily buffeted Polish markets, their quick recovery suggested that emerging market investors continue to view Poland as a steady ship in stormy seas.[28] Moreover, many market analysts believe that the trend toward Poland will be further supported by the Brazilian crisis and the introduction of the euro.

82.   The reform of the pension system, beginning this year, should have a number of positive impacts over the longer term on the Polish economy. First, it is expected to favorably influence both private and public saving rates, and the new pension funds should promote capital market development. This is likely to lead as well to greater foreign interest in Poland's capital markets. The pension reform is now explicitly dealing with the intergenerational debt issue and may allow for some future reductions in the high rate of social contributions, which could enhance interest in the forthcoming privatizations as well as other foreign investment projects.

D. Comparative Developments in Foreign Direct Investment

83.   This section compares developments in foreign direct investment into selected transition countries and some other emerging markets.[29] In addition to Poland, the set of transition countries includes Bulgaria, the Czech Republic, Estonia, Hungary, Romania, the Slovak Republic, and Slovenia. The section also looks at a wider comparison of emerging markets, including, in addition to the above transition economies, several emerging markets in Asia, Latin America, and Africa.[30]

84.   FDI flows into this group of Central and Eastern European countries declined in 1996 relative to 1995, but then resumed the upward trend in 1997. Russia, Romania, Poland, and Bulgaria were the beneficiaries of the largest increases in inward FDI in absolute terms, while inflows to the Czech Republic declined for the second consecutive year. Poland was the

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[27] Moody's and Standard & Poor's ratings of Baa3 and BBB-, albeit both of investment grade, have remained unchanged since they were first assigned in late 1995 and early 1996.

[28] As of February 1, the main index of the Warsaw stock exchange had risen by almost 15 percent since end-1998, with foreign capital reportedly the driving force behind the advance, so it appears that confidence in the market has not eroded.

[29] The appendix describes some of the data limitations that make comparisons between countries difficult.

[30] Argentina, Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Russia, South Africa, Thailand, Turkey, Ukraine, Uruguay, and Venezuela.

largest recipient of inward FDI flows, and 1998 further consolidated this trend (Figure 9). Poland is also notable for its much more stable year-to-year pattern of inflows and was the only country to receive steadily increasing amounts of FDI during this period.

85.   The second panel in Figure 9 tells a somewhat different story. When FDI flows into the countries are measured on a per capita basis, Poland drops to fourth place. Hungary moves into first place for the period from 1995 to 1998, with the spikes in the earlier years an indication of Hungary's quick move to privatize state-owned enterprises and to specifically attract foreign strategic investors. Estonia's second-place per capita ranking is due to a major privatization sale in 1998. Figure 10 illustrates inward flows normalized by two other variables: GDP and gross fixed investment. Using either of these scaling approaches puts Poland in third place when ranked by average inflows over the period, while Estonia and Hungary take the first two places again.

86.   By 1998, Poland also led the other countries of the region in terms of total book value of FDI in the country,[31] whereas on a per capita basis, it ranked fifth (Figure 11.) Hungary and the Czech Republic, two of the first four countries, benefited from their much earlier efforts at privatization.

87.   Figure 12 presents a broader set of comparator countries and shows two periods (1993–95 and 1996–98) with respect to average per capita annual inward FDI flows. The lower panel illustrates the earlier period, with Poland ranking ninth out of the 28 emerging markets. In the more recent period, illustrated in the top panel, inward FDI flows have risen substantially for all countries, and Poland edged up into eighth place. Figure 13 focuses exclusively on the more recent period and, in the top panel, shows that Poland ranked fourth in terms of average annual inward FDI flows.[32] In the lower panel,[33] Poland ranked seventh in terms of average annual inward FDI flows to GDP.
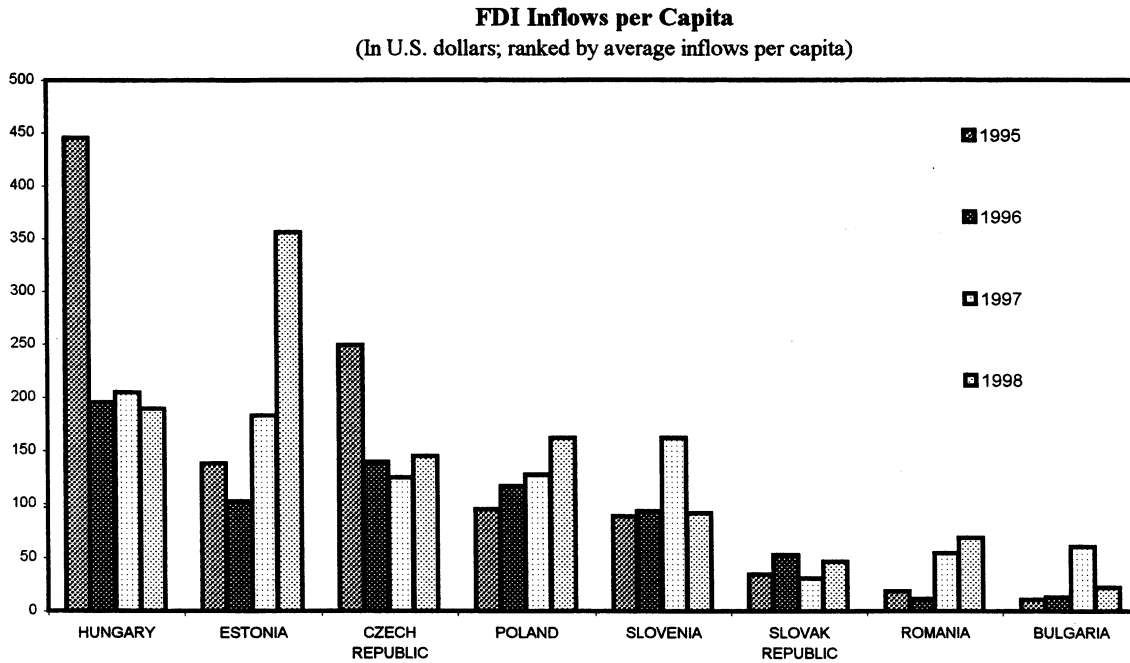
88.   What accounts for these differences in normalized FDI inflows? Some studies have examined FDI flows based on a variety of variables that are likely to determine investor interest. Among the variables used are unit labor costs, relative wages (vis-a-vis investing countries), size of domestic market, quality of labor force, infrastructure, political stability, and other macroeconomic and microeconomic factors.

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[31] According to UNCTAD (1998), if reinvested earnings and intra-company loans are excluded from the FDI stock figures, Poland ranked third in 1997, behind Hungary and Russia. Reliable data on Bulgaria's stock were not available for this comparison.

[32] China has been excluded from this comparison of non-normalized inflows owing to the overwhelming influence of its market size; China received more than twice the FDI inflows of the next highest ranking country, Brazil.

[33] This panel includes China, since these data are scaled by GDP.

Figure 9. Poland: FDI Inflows to Selected Transition Economies, 1995-98

FDI Flows into Representative Economy
(In millions of U.S. dollars; ranked by average inflows)

FDI Inflows per Capita
(In U.S. dollars; ranked by average inflows per capita)
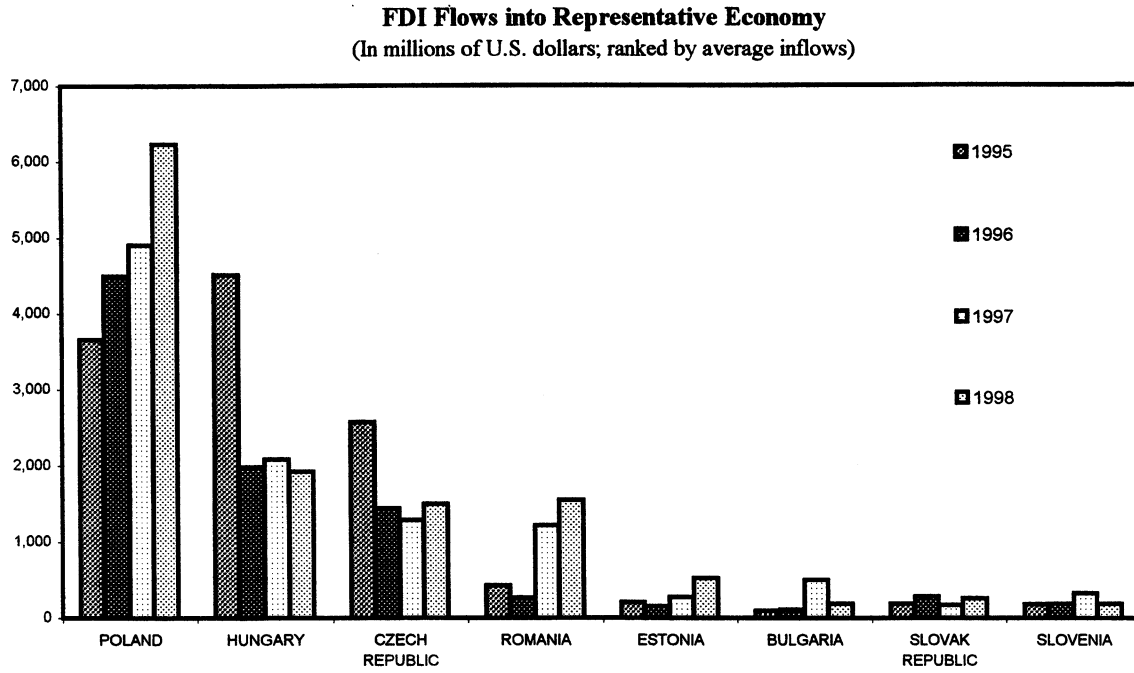
Sources: *International Financial Statistics* ; staff estimates.

Figure 10. Poland: Scaled FDI Inflows to Selected Transition Economies, 1995-98
(In percent)

FDI Inflows/GDP
(Ranked by average inflows to GDP)

FDI Inflows/Gross Fixed Investment
(Ranked by average inflows to investment)
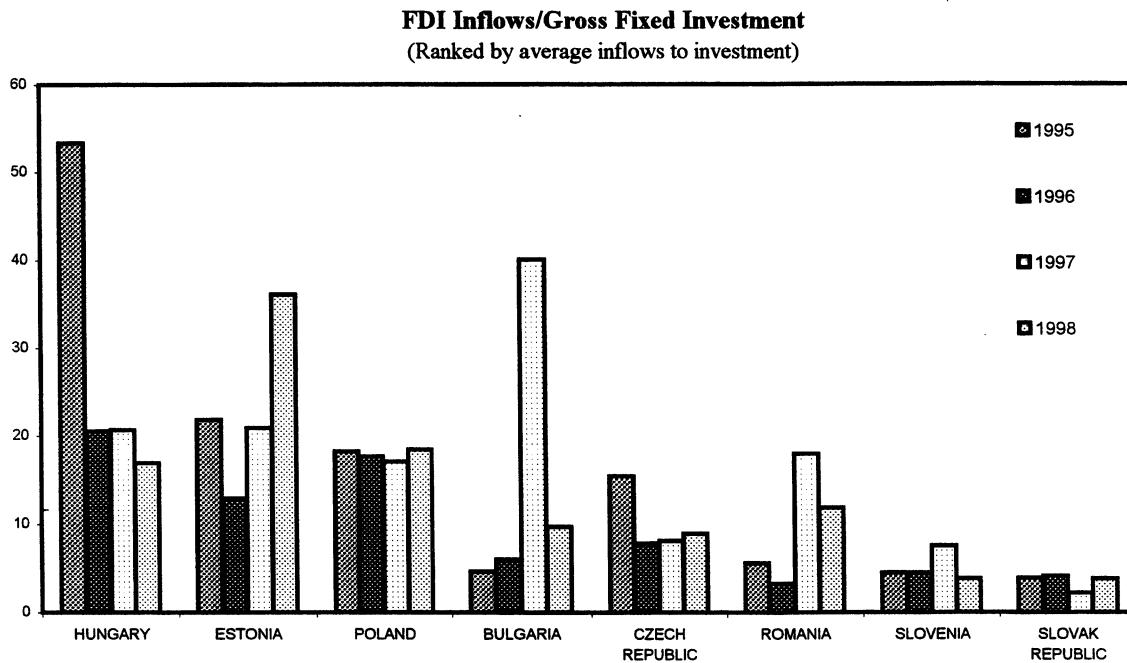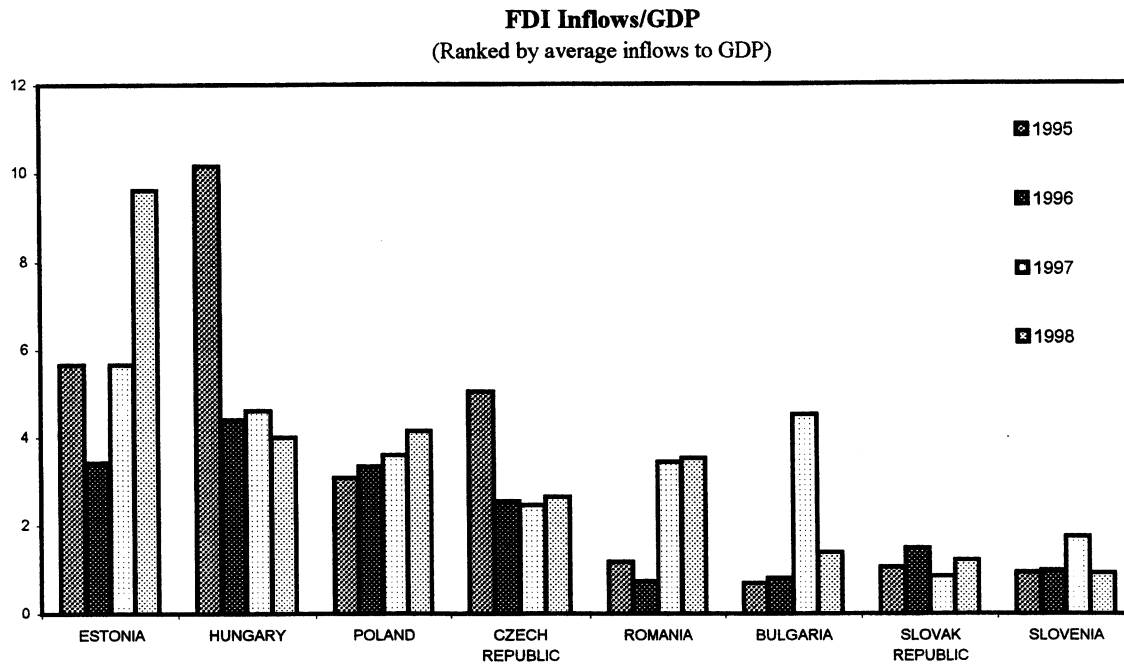
Sources: *International Financial Statistics* ; staff estimates.

Figure 11. Poland: FDI Stock in Selected Transition Economies, 1998

FDI Stock, 1998
(In millions of U.S. dollars)

FDI Stock per Capita, 1998
(In U.S. dollars)
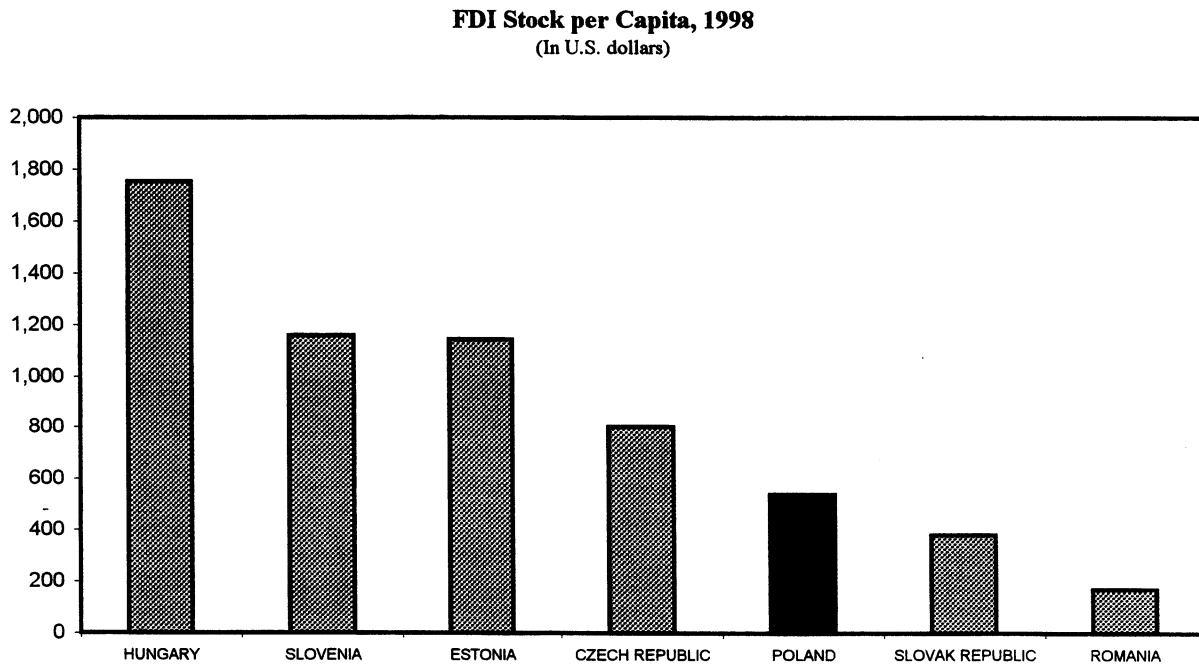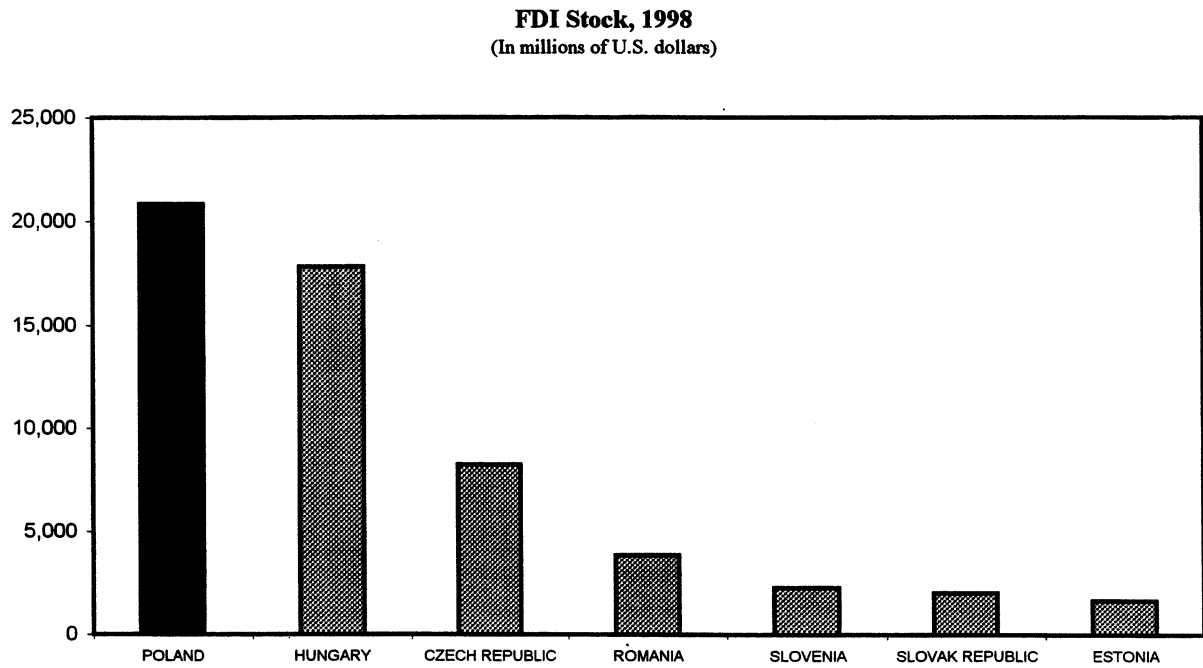
Sources: *International Financial Statistics;* staff estimates.

Figure 12. Poland: FDI Inflows per Capita to Selected Emerging Markets
(In U.S. dollars)

1996-98
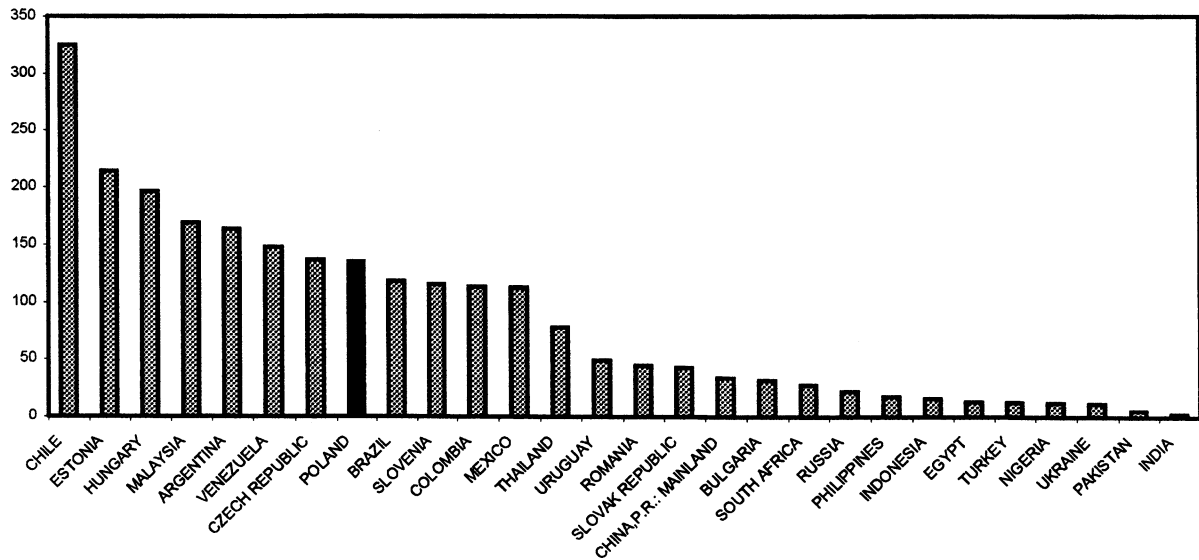
1993-95
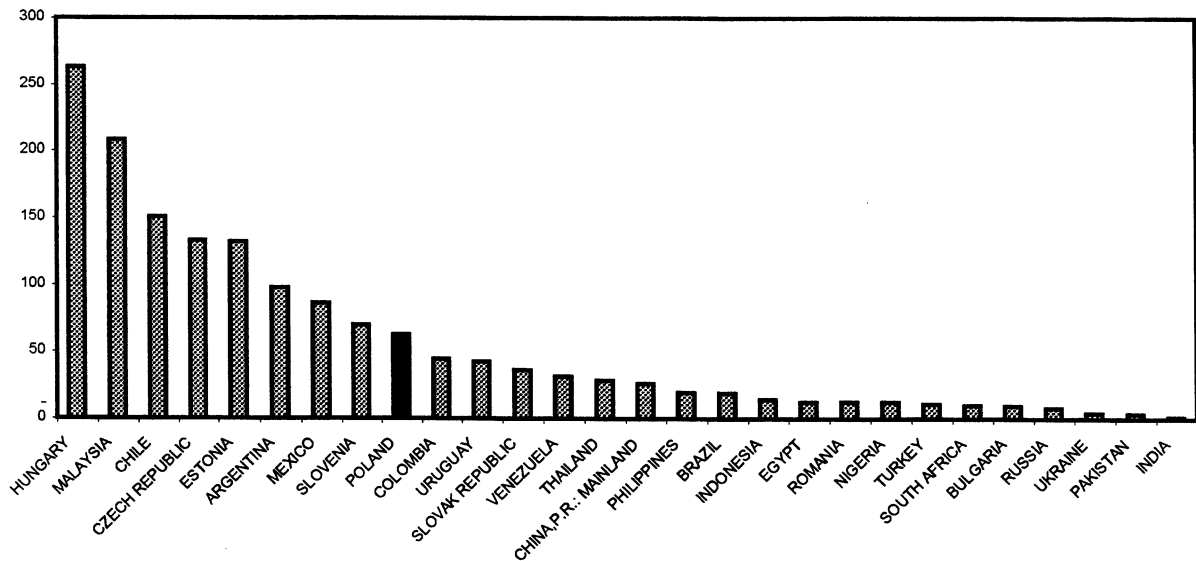
Sources: *International Financial Statistics* ; *World Economic Outlook* ; staff estimates.

Figure 13. Poland: FDI Developments to Selected Emerging Markets, 1996-98

Average FDI Inflows
(In millions of U.S. dollars)

Average FDI Inflows to GDP
(In percent)
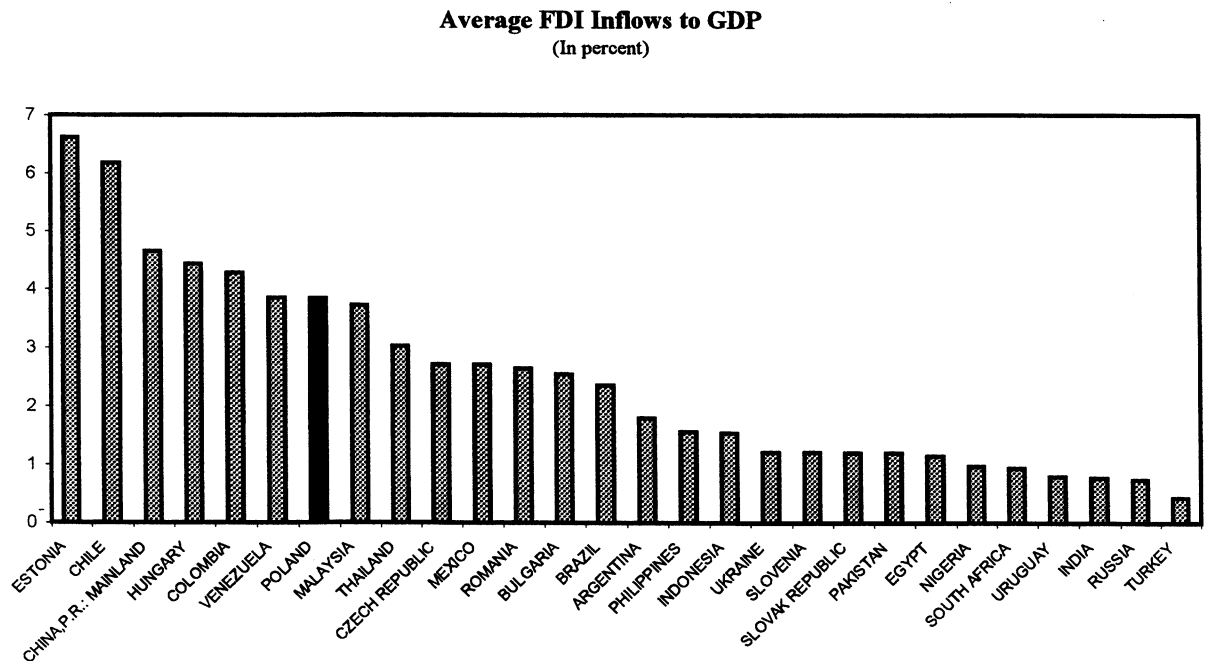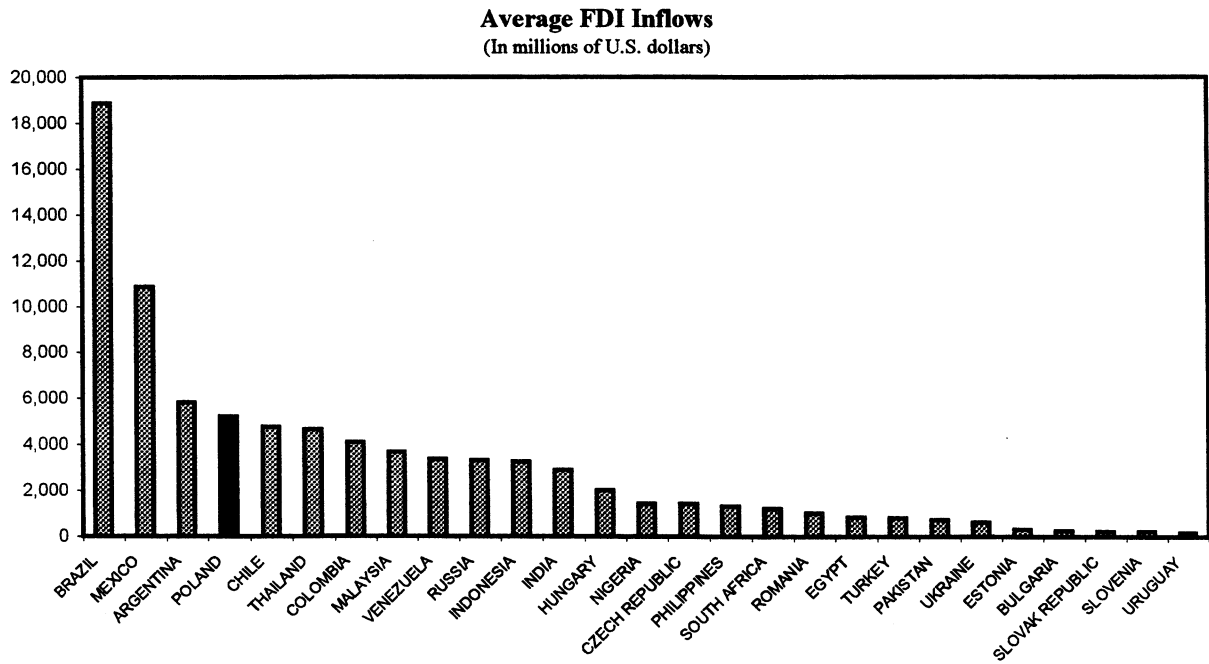
Sources: *International Financial Statistics; World Economic Outlook*, staff estimates.

89.   It would be useful to find an aggregate variable that might capture many of the likely determinants listed above. One such type of variable might be a country risk indicator, such as those published by, among others, *Euromoney*, the Economist Intelligence Unit, and *Institutional Investor*. Country risk indicators are developed by using investors' and analysts' views on countries' future prospects based on many of the "fundamentals" listed above, but often with a more forward-looking orientation. Furthermore, analogous to efficient markets theory, in which a financial asset price should incorporate all available information, the country risk measures might operate somewhat like a price in incorporating all currently available information in assessing countries' prospects, including expected changes in policy, institutional factors, the changing political climate, as well as projections for the usual fundamental economic indicators.[34]

90.   For this purpose, Table 6 uses the *Euromoney* country risk scores and rankings to provide a quantification of risk perceptions for each of the countries for March 1995 and September 1998.[35] The total scores can range from 0 to 100, with 100 being the most creditworthy or least risky country in which to invest; the ranks are the inverse, with the most creditworthy country receiving a rank of 1. After its debt restructuring, Poland began to move up the ranks and was at number 71 in March 1995. By December 1997, in the wake of the Asian crisis, Poland had risen to 48, and the most recent country risk ranking, for September 1998, places it as 38th.

91.   The scatter plots in Figure 14 illustrate the relationship between inward FDI per capita and two variables—the country risk indicator (averaged over 1995 to 1998) and PPP-adjusted GDP per capita at the start of the sample period (used as a crude proxy for productivity). For both of the variables, Poland's inward FDI flows per capita are almost exactly on the trendline, so that Poland's position as a recipient of FDI seems to be somewhat explained by investors' views on country risk and a rough measure of initial productivity, rather than on country-specific "special factors."

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[34] It is interesting to note, for example, that *Euromoney*'s September 1996 article on the country risk rankings was headlined as "Asia's economies start to slip" with the following overview: "In *Euromoney*'s semi-annual ranking of country creditworthiness, the winners are the emerging countries of east and central Europe. But south-east Asian economies—and even Japan—are looking riskier, as debt ratios worsen and monetary instability spreads." At this same time, in other circles, there was still much talk of the "Asian miracle."

[35] The score for each country is computed using nine weighted categories, some of which are based on assessments provided by economists and political analysts, while others are based on data from sources such as the World Bank's *World Debt Tables*. The nine categories and their respective weights are: economic performance, political risk, debt indicators, debt in default or rescheduled, credit ratings, access to bank finance, access to short-term finance, access to capital markets, and discount on forfaiting. Economic performance and political risk are given the highest weights, while the last four categories have the lowest weights.

Table 6. Country Risk Comparisons

Country	Country Risk 1/ Sept. 1998		Mar. 1995		Increase in rank from 1995 to 1998
	rank	score	rank	score	
CHILE	30	76.6	34	75.9	4
POLAND	38	71.1	71	47.9	33
HUNGARY	39	71.1	50	60.2	11
CZECH REPUBLIC	40	71.0	35	73.9	-5
CHINA	41	67.3	42	66.1	1
URUGUAY	44	62.9	61	52.2	17
COLOMBIA	45	62.9	48	60.9	3
MEXICO	47	61.8	52	58.6	5
ARGENTINA	48	61.3	56	55.5	8
EGYPT	49	61.2	73	47.4	24
SOUTH AFRICA	50	61.1	45	62.9	-5
ESTONIA	51	61.1	66	49.4	15
MALAYSIA	53	59.7	28	78.6	-25
THAILAND	54	59.2	30	77.9	-24
PHILIPPINES	55	58.4	60	52.7	5
SLOVAK REPUBLIC	58	57.4	53	57.9	-5
INDIA	59	57.1	51	59.1	-8
TURKEY	61	56.2	57	55.0	-4
BRAZIL	70	52.6	58	54.6	-12
VENEZUELA	76	47.3	67	49.4	-9
ROMANIA	82	46.3	68	48.7	-14
INDONESIA	88	43.6	40	69.7	-48
BULGARIA	93	42.3	90	40.7	-3
UKRAINE	118	36.4	145	26.4	27
PAKISTAN	123	35.9	75	47.0	-48
RUSSIA	127	35.3	141	27.8	14
NIGERIA	132	33.6	112	33.4	-20

Source: *Euromoney*

1/ Country risk ranks are based on *Euromoney* rankings for 181 countries.

Figure 14. Poland: Average FDI Inflows per Capita, Scatter Plots, 1995-98
(In U.S. dollars)

FDI inflows per capita vs. *Euromoney* country risk

High country risk   Low country risk
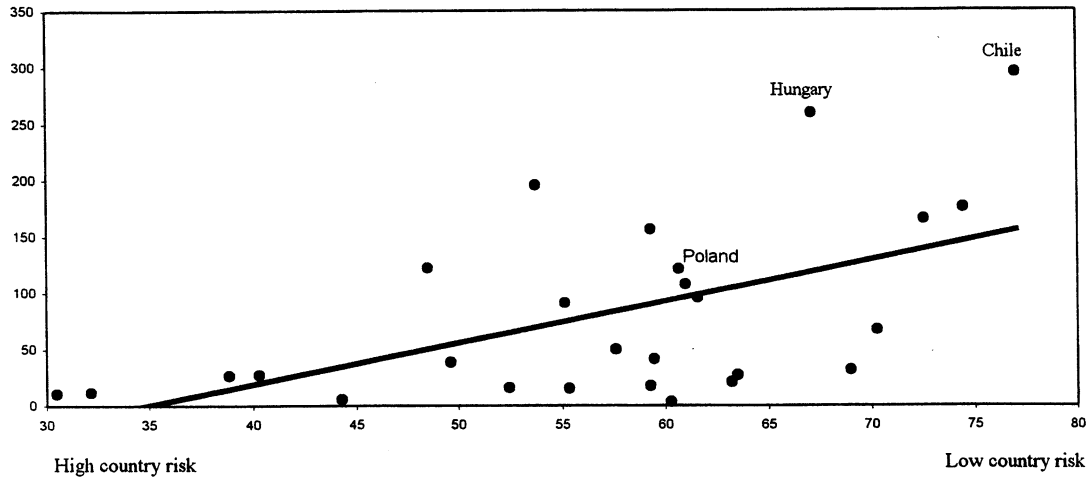
FDI inflows per capita vs. PPP per capita

PPP per capita in U.S. dollars, 1995
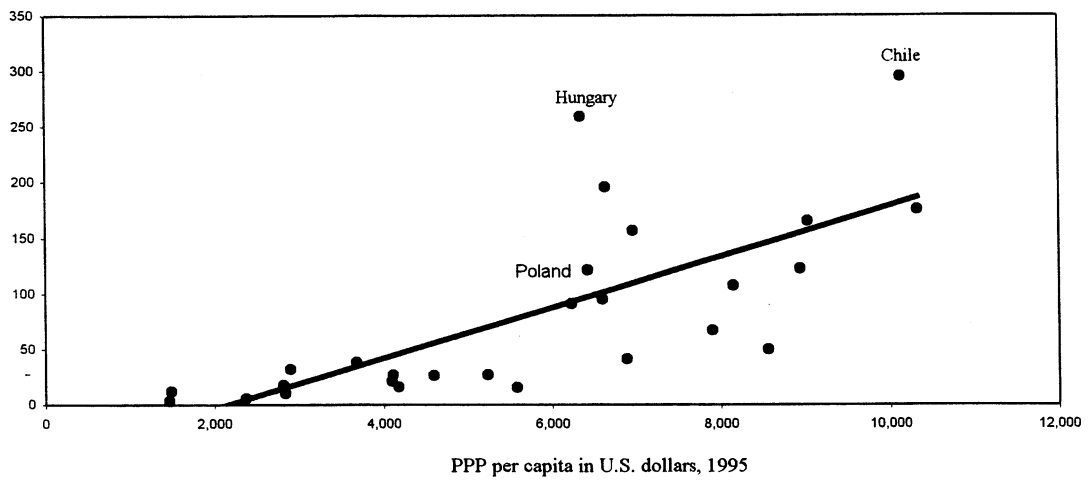
Sources: *International Financial Statistics*; *World Economic Outlook*; *Euromoney*; staff estimates.

E. Conclusions

92.   Over the course of its transition to a market economy, Poland has developed a reputation for sound macroeconomic policies and openness both to trade and financial flows. This reputation has attracted significant capital inflows in recent years. Poland's prospects as a candidate for early EU enlargement, its favorable geographic location, and its impressive progress in market-oriented reforms have also made the country one of the favored destinations for foreign investment. The forthcoming program for privatization, the launching of pension reform, and the interest expressed by investors in "EU convergence plays" with Poland's debt suggests that foreign inflows could be even greater in the coming years.

93.   Since the surge in capital inflows to Poland began in 1995, FDI has been the most significant component. FDI is likely to continue to maintain its dominance in Poland's capital inflows, particularly if the privatization program is carried out as planned. Moreover, this composition of capital inflows indicates that the probability of a sudden reversal of flows is fairly low. Nevertheless, the share of credit in FDI has been increasing, and although there is little likelihood of default on such intra-company lending, these loans could dry up if the differential cost of borrowing domestically were to fall significantly.

94.   Although portfolio inflows have played only a modest role in Poland's external financing, the share of such inflows may well increase in the medium term as the financial markets in Poland deepen and become more liquid. Market capitalization in Poland is still quite low, but its expansion will be bolstered by the extensive privatization program. Perhaps even more important will be the newly created pension funds, which should increase domestic savings and channel these savings into the financial market.

95.   The crises in emerging markets from Asia to Latin America, and in particular, the Russian crisis, have served to highlight the distinctions among the transition economies, with the fast-track market reformers, such as Poland, suffering temporary and relatively minor financial disruptions. Indeed, notwithstanding the initial negative impact on Poland's financial markets, the crises may well intensify inflows to Poland in the near term as investors seeking diversification find the number of "safe" candidates for investment shrinking. In sum, Poland appears to be particularly well-positioned to sustain strong investor interest and maintain its access to international financing.

LIMITATIONS AND DEFICIENCIES OF DATA ON CAPITAL FLOWS

1.   In attempting to quantify capital flow developments in Poland, there are a number of data limitations that make analysis problematic. First, the category, "unclassified transactions," was included in the balance of payments as a short-term capital account item until 1996. At that time, the NBP decided to record this item as a special category in the current account since it was determined that most of these inflows were associated with unregistered cross-border trade with Germany, Russia, Ukraine, and Belarus. Nevertheless, some proportion of these "unclassified transactions" are probably pseudo-financial account items and, thus, are incorrectly included in the current account. The capital flow data in this paper adjust the balance of payments prior to 1996 to reflect the new methodology.

2.   Another limitation is that detailed data on portfolio flows are available beginning only in 1995, although portfolio investment was negligible in the earlier years of transition.[36] More worrisome, though, is the fact that unexplained net flows, in the form of errors and omissions, grew substantially in the period 1996 to 1998, and the problem became particularly acute in 1998. According to Durjasz and Kokoszczynski (1998), companies may have borrowed more abroad than has been reported through the banking system.

3.   For FDI, there are three sources of data: the balance of payments data prepared by the NBP; IFS data which are based on the NBP balance of payments data but also include results from a survey of enterprises conducted once a year; and registration and survey data from the Polish Agency for Foreign Investment (PAIZ). The discrepancies between the three sets of data are large. The balance of payments data are based on financial flows and, therefore, do not include investment transactions in-kind (investment in the form of imported equipment, materials, etc.). The IFS data differ from the balance of payments data because they include reinvested profits (on a net basis), a reclassification of transactions that have been misreported in the balance of payments statistics, valuation differences (the survey is based on book value), and FDI outside the banking system.

4.   The estimates of FDI based on the balance of payments and IFS series are substantially below that provided by PAIZ. The major differences are that PAIZ statistics include gross reinvested profits, rather than net profits (with losses deducted), and bank credits may, in some cases, be included. In addition, there are no penalties imposed on enterprises for misreporting data to PAIZ, and there could, therefore, be some cases in which enterprises present an overly optimistic picture of their situation.

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[36] However, there were portfolio investments in equity prior to 1995.

5.   For example, in 1997, FDI inflows to Poland, based on NBP cash-flow data, were US$3.1 billion. The data reported in the IFS show inflows of US$4.9 billion. PAIZ data, however, show inflows of US$6.6 billion, considerably higher than either of the other two estimates. Nevertheless, each of the three data series tells the same general story with respect to FDI trend developments.

6.   In attempting comparisons with other countries, data limitations are exaggerated relative to those discussed above for Poland. In general, there are considerable difficulties in ensuring consistency of data for emerging market economies, but these difficulties are much more severe with data on capital flows. There remain significant gaps in data series, capital flow data are especially subject to country-specific approaches, and classification of such flows is innately difficult in the best of circumstances. For example, there are problems with different national treatment of FDI data (inclusion of in-kind vs. strictly cash transactions, inclusion of loans and retained earnings vs. strictly equity, etc.) In addition, FDI data are often based on surveys, the quality and coverage of which may vary significantly from country to country. Most analyses of FDI developments rely on IFS data. However, the data provided for the IFS should also be treated with caution in cross-country comparisons.[37] Thus, any analysis should be viewed with the appropriate caveats in view of the data limitations.

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[37] A notable example of difficulties with using IFS data for some countries is the data on FDI inflows and stocks for Russia. Thus, while FDI inflows in 1997 amounted to US$6.2 billion, the total FDI stock by year-end was given as US$970 million. By contrast, UNCTAD estimated FDI stock in Russia at US$12.7 billion by end-1997.

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III. RECENT DEVELOPMENTS IN THE POLISH FINANCIAL SYSTEM[1]

96.   This chapter looks at aspects of banking conditions and performance that could have an impact on monetary policy formulation and implementation in Poland, at macroeconomic conditions that could affect the banking system, and at the regulatory and supervisory environment for banking.

A. Structure of the Financial System

Recent history

97.   Until 1989 the Polish banking system was dominated by the National Bank of Poland (NBP) and four state-owned banks that specialized in foreign trade, currency operations, and foreign currency deposits; agriculture; consumer saving; and mortgages. There were also 1,663 small local cooperative banks that were linked to the state bank dealing with agriculture. In 1989, the four hundred branches of the NBP were converted to nine regional joint stock state-owned banks, leaving central banking and supervisory functions exclusively to the NBP. Subsequent reforms focused on privatizing and consolidating state banks so that they could compete more effectively with foreign banks. As part of these efforts, the NBP arranged the takeover of small private and cooperative banks by regional domestic banks, as well as by allowing foreign banks limited foreign investment in troubled banks. Privatization, together with liberal licensing requirements during the early 1990s, led to a rapid increase in the number of banks. At the end of 1998, there were 83 commercial banks in operation, the majority of which were privately-owned.

98.   Favorable macroeconomic conditions played an important role in the development of the banking system. Poland's real GDP growth has been among the highest in transition countries, and inflation has declined steadily, falling from triple digit levels in the early 1990s to about 9 percent in 1998 (end-of-period). Competition among banks, together with Poland's prospective membership in the EU, has also helped to rapidly deepen the range of services offered by the banking sector. During the early years of transition, banks focused on servicing corporate customers. With the decline in margins from corporate banking, bank activity has shifted toward retail banking as evidenced in the rapid rise of consumer lending in recent years. Banks are now preparing to offer pension funds, and several banks have established large pension departments in anticipation of the reform of the pension system. Nevertheless, the Polish financial system is still at an early stage of development compared with several other European transition countries as judged by the ratios of bank deposits, broad money (M2), and credit to nongovernment relative to GDP, as well as the number of bank branches per capita (Figure 1).

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[1]Prepared by Sami Geadah and Thordur Olafsson.

Figure 1. Poland: Bank Development, 1998
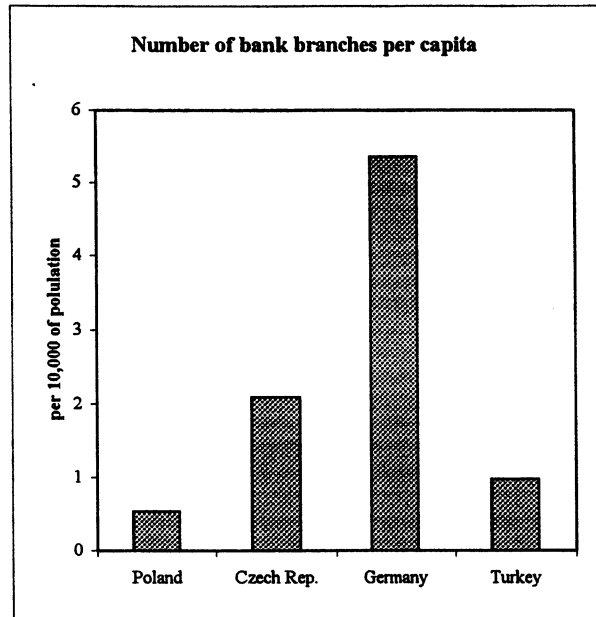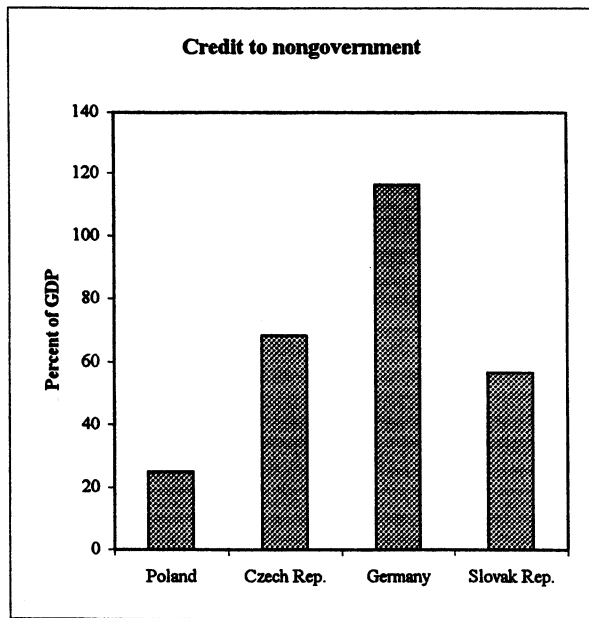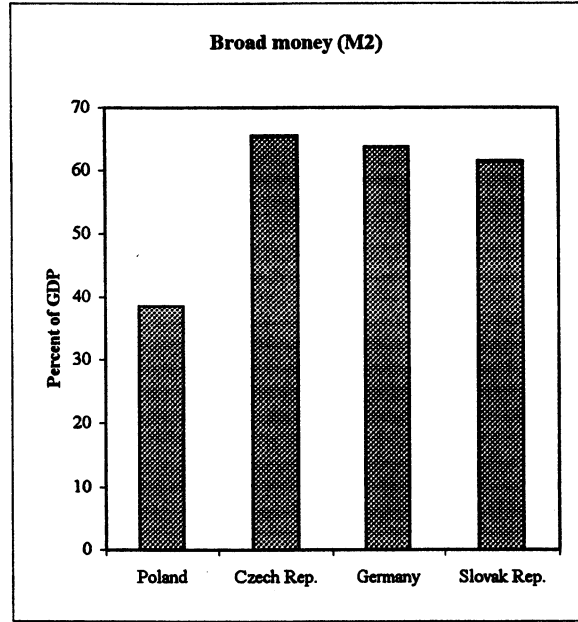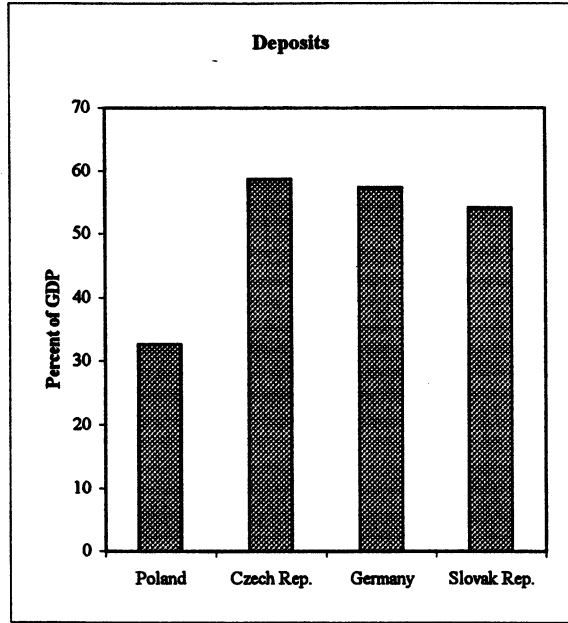
Sources: WEO, IFS, OECD and staff estimates.

Concentration and ownership

99.   The Polish banking system remains highly concentrated. Over half of bank assets are concentrated in six (out of 83) commercial banks, with 18 percent of assets held by one of the remaining state banks, Bank PKO-BP (the former savings bank). The proportion of bank assets held by state banks fell from 80 percent in 1993 to 48 percent in 1998, and the number of banks with majority public-sector interest declined from 29 to 14 during this period (Table 1). The impending sale of the government's stake in the second largest bank in Poland (Bank Pekao-SA), which held 11 percent of bank assets at the end of 1997, is expected to reduce significantly the proportion of bank assets held by the public sector. Plans for privatizing the remaining state banks (PKO-BP and BGZ) are not well advanced, however, partly because their privatization is complicated by issues related to asset quality, a need for recapitalization, and some thinking that perhaps these banks should remain domestically owned.

100.   Foreign banks play a significant role in Poland. The number of majority foreign-owned banks rose from 7 in 1993 to 28 in 1998, and the percentage of bank assets held by them increased from 2 percent to 15 percent during these years. Foreign banks also had minor participation in another 14 banks in 1998. German banks are by far the largest foreign investors, accounting for one third of foreign investment in banking; they provided 14 percent of the equity capital of commercial banks at end-1997.

101.   There is a large network of cooperative banks in Poland, though their number has fallen from 1,653 to 1,208 during 1993–98. Despite the large number, cooperative banks account for less than 5 percent of banking system assets, as their operations focus on the rural agricultural sector; the rural sector is also served by the extensive branch network of Bank PKO-BP. The cooperative banks are connected to the banking system through the Bank for Food Economy (BGZ), a state bank that provides cooperative banks with clearing, refinancing, and support services. The NBP has placed several hundred cooperative banks in a recovery program (which partially exempts them from meeting their reserve requirements) with a view to facilitating the restructuring and take-over of these cooperatives by other banks (see below).

102.   Commercial bank liabilities are dominated by holdings of short-term time deposits by households. Three quarters of all deposits are owned by households, and about one-fifth of deposits are in foreign currencies. Demand deposits accounted for only about one quarter of deposits at end-September 1998, as the high reserve requirement on demand deposits has encouraged banks to offer time deposits with short maturities. Reserve requirements in Poland are high by international standards (11 percent on zloty time deposits, 5 percent on foreign

Table 1. Poland: Structure and Performance of the Banking Sector

	1993	1994	1995	1996	1997	September 1998
Number of licensed banks	87	82	81	81	83	83
Of which:						
Majority state-owned (number)	29	29	27	24	15	14
As a percent of total assets	80.4	76.1	68.3	66.6	49.3	48.1
Majority foreign-owned (number)	7	8	15	22	26	28
As a percent of total assets	2.0	2.2	2.9	11.9	13.8	14.5
Branches of foreign banks (number)	3	3	3	3	3	3
As a percent of total assets	0.6	1.0	1.2	1.8	1.4	1.7
Number of banks accounting for						
25 percent of total assets	2	2	2	2	2	2
75 percent of total assets	12	12	12	13	13	14
Total assets as a percent of GDP	53.3	52.1	51.7	54.4	55.7	59.9
Foreign currency denominated						
Assets (as a percent of total assets)	29.9	29.0	21.6	20.8	22.0	19.4
Liabilities (balance sheet/ as a percent of total assets)	27.4	27.0	20.6	19.8	20.3	18.5
Of which: over 30 days to maturity (as a percent of total assets)	16.1	14.8	10.3	9.6	9.9	10.1
Contingent and off-balance sheet accounts (as a percent of total assets):	19.6	20.1	21.0	30.5	43.3	64.4
Of which foreign currency denominated (as a percent of total assets):				12	19	32
Total loans (as a percent of GDP)	19.9	17.8	17.7	21.4	23.9	25.6
Credit to private sector (as a percent of GDP)				14.2	16.4	18.1
Total deposits excluding interbank (as a percent of GDP)	31.1	32.7	31.1	32.7	34.4	35.6
Central bank credit to banks (as a percent of GDP)	2.2	1.8	1.6	1.5	1.4	1.1
Average pretax return on total assets	1.1	1.3	3.6	3.7	2.9	1.9
Nonperforming loans, substandard or less (as a percent of total loans)	29.3	28.2	20.9	12.9	10.3	9.3
Provisions for loan losses (as a percent of nonperforming loans)						
Total specific provisions	56	69	67	64	58	52
Total general provisions	6	7	10	15	21	15
Risk-weighted capital/asset ratio (in percent)	8- 15	8-15	8-15	8-15	8-15	8-15

Source: General Inspectorate for Banking Supervision.

currency deposits, and 20 percent on zloty demand deposits), and are not renumerated.[2] On the asset side, commercial banks hold about 40 percent of their assets in loans and about 30 percent in securities (Table 2). The composition of bank assets differs between private and state-owned banks. Whereas private banks have focused on holdings of Treasury bills and—more recently—consumer loans, a large portion of the portfolio of state-owned and ex-state-owned specialized and regional banks consists of loans to state enterprises for housing, and to agriculture.

Table 2. Main items in the Consolidated Balance Sheet of Polish Commercial Banks, September 1998

(In millions of zlotys and percent of total)

Reserves	19.3	6.1	Demand deposits	47.2	14.8
Nonreserve claims on NBP	29.5	9.2	Time & saving deposits	125.9	39.5
Foreign assets	15.3	4.8	Money market instruments	0.8	0.2
Claims on government	60.0	18.8	Foreign liabilities	17.8	5.6
Claims on nonfinancial public ent.	29.5	9.2	General government liabilities	13.0	4.1
Claims on private sector	98.9	31.0	Credit from NBP	10.0	3.2
Claims on nonbank financial sector	3.6	1.1	Capital accounts	29.1	9.1
Interbank assets	33.5	10.6	Interbank liabilities	36.6	11.5
Other	29.5	9.2	Other liabilities	38.5	12.0
Total assets	319.0	100.0	Total liabilities	319.0	100.0

Source: National Bank of Poland.

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[2]Reserve requirements were calculated on the basis of deposit liabilities on the 10th, 20th, and last day of the month until January 30, 1999, allowing commercial banks to window dress deposit liabilities to reduce their required reserves. Commercial banks have had to calculate mandatory reserves on the basis of the daily average of deposit liabilities since then.

Interest rates

103.   Interest rates and bank intermediation spreads have fallen in recent years. The decline in interest rates has accompanied the reduction in inflation which, together with greater competition among banks, has resulted in lower interest margins and a lower dispersion of bank deposit rates. On average, three-month deposit rates have fallen from 25 percent at end-1993 to 18 percent in the third quarter of 1998, while their range has narrowed from 20–31 percent to 17–20 percent. At the same time, lending rates on low-risk loans have fallen from 35 percent to 20 percent (Figure 2). Interest margins may be expected to narrow further in 1999, as interest rates continue to fall and as a result of competition among banks.

104.   Lending rates on Polish banks' foreign-currency denominated assets have been significantly lower than the corresponding zloty rates. This led to a rapid expansion in foreign currency and foreign-currency linked lending in 1998, including for residential mortgages.

Deposit insurance

105.   Deposit insurance is provided by the Bank Guarantee Fund (BGF). The BGF was established in 1995 and is owned by the NBP, the Treasury, and the commercial banks. The BGF has two fundamental functions: guaranteeing deposits, and supporting the restructuring and rehabilitation of banks (see below). These functions are supported by regular analyses by the BGF staff of the banking sector, which reportedly foster early identification of potential threats. Participation in the system is mandatory for all banks. Most banks are required to allocate 0.4 percent of their deposits to the BGF. The exceptions are Pekao-SA, PKO-BP, and BGZ, which up to end-1999, are obliged to allocate 0.2 percent of their deposits since their deposits (in excess of amounts covered by the BGF) are covered by a state guarantee.[3] The contribution rate for these three banks is to be raised to the level applied to the rest of the banking system as of 2000 when the state guarantee will end. Allocations are not collected from banks, and are accessed only in the event there is a need to pay off depositors. Banks are obligated to invest the amounts allocated to the BGF in Treasury or NBP bills. The BGF covers deposits in registered bank accounts of natural persons, legal persons, and organizational units that are not corporate bodies. Amounts not exceeding ECU1,000 are covered fully, and 90 percent of the next ECU5,000 are covered. Plans are for a gradual increase in the coverage of deposits to EU limits: ECU8,000 in 1999, ECU11,000 in 2000, ECU15,000 in 2001, ECU17,500 in 2002, and ECU20,000 thereafter.

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[3]The state guarantee was provided to these banks before the BGF was established.

Figure 2. Poland: Nominal Interest Rates, 1994-98
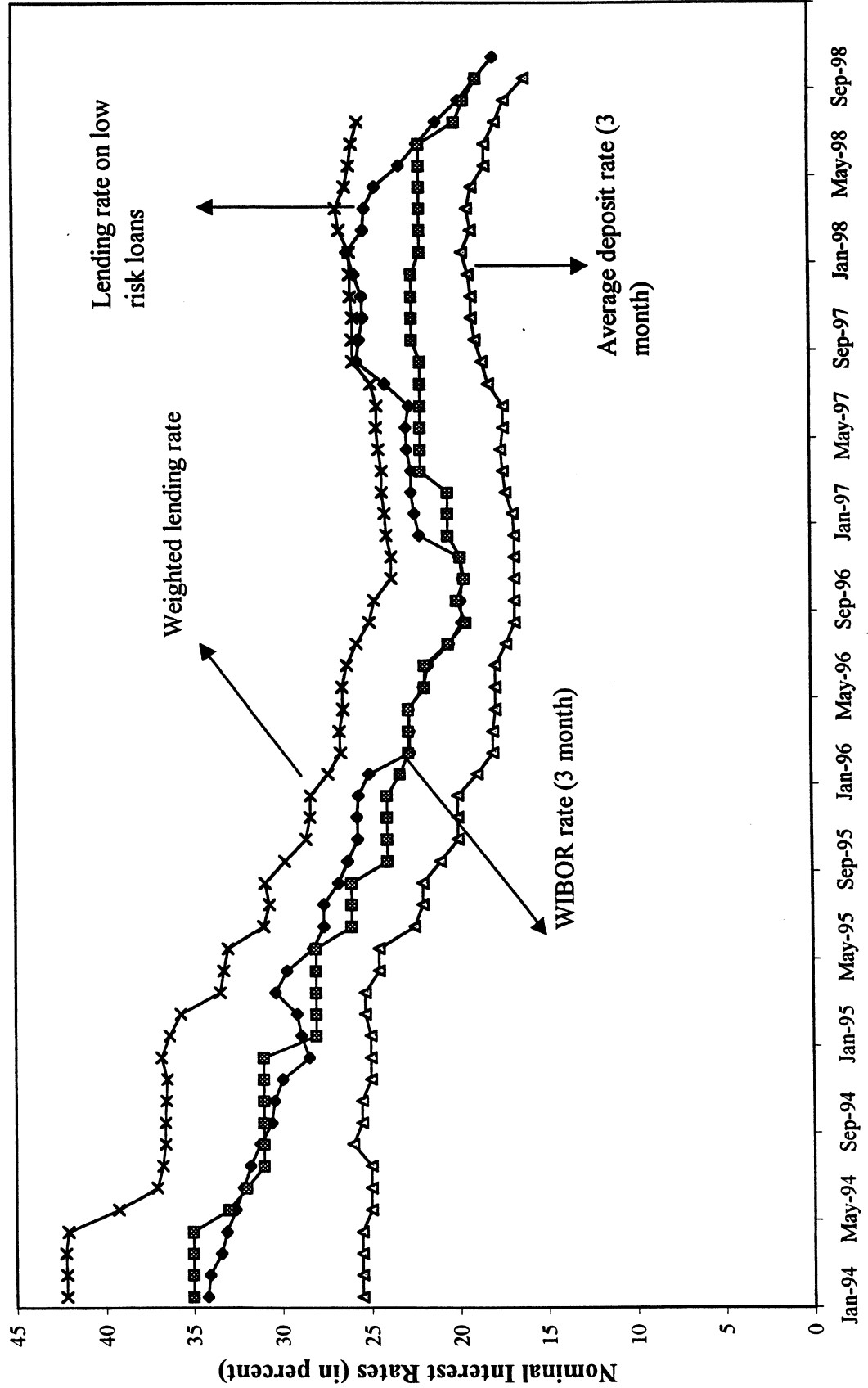
Solvency assistance

106.   BGF solvency assistance to banks is granted at the request of the concerned bank on the basis of documentation presented by the bank and prepared in keeping with the requirements of the BGF. To access this facility, an institution needs to demonstrate that it is facing solvency difficulties and that the cost of assistance to the BGF would be less than the cost of the bank defaulting and the exercise of the deposit guarantee. Solvency assistance is provided in the form of loans at favorable terms: loan rates are 40 percent of the NBP refinance rate (20 percent for cooperative banks), and maturities are up to ten years, with a grace period of up to five years. Insolvent banks that are undergoing restructuring operations also benefit from reductions in reserve requirements and in tax obligations. Banks contribute 0.4 percent of their risk-weighted balance sheet assets and guarantees to the BGF annually, as well as 0.2 percent of the sum of off-balance sheet liabilities (excluding credit lines). As with deposit insurance, the contribution rate for the three state banks is one half that of other banks until the end of 1999. In January 1998 the NBP began paying 30 percent of the contributions to the BGF (with a corresponding reduction in banks' fees to the BGF); this percentage was raised to 40 percent at the beginning of 1999, and Parliament is under pressure to increase it further to 50 percent.

107.   Since its inception in 1995, the BGF has assisted five commercial banks and 21 cooperative banks to address their solvency difficulties; it has also assisted three commercial banks to take over insolvent commercial banks, and 13 commercial banks and 13 cooperative banks to take over insolvent cooperative banks. The cost of this assistance has amounted to Zl 800 million (compared with Zl 900 million contributed to the facility since its inception). In addition, the NBP has, over time, reduced reserve requirements for 23 commercial banks (of these four or five banks have been exempted altogether from reserve requirements) and for 238 cooperative banks by Zl 542 million and Zl 295 million, respectively. The reductions have been for limited periods, and presently 16 commercial banks and 120 cooperative banks enjoy such reductions (by Zl 512 million and Zl 134 million, respectively). The reduction in requirements is determined by the proportion of assets of insolvent institutions to total assets in merged banks. Since 1995, there have been three commercial banks, and 88 cooperative bank bankruptcies. There were several other banks undergoing bankruptcy procedures or liquidation at the end of 1998.

B.   Banking Conditions and Performance

108.   Several indicators suggest that the Polish financial system was in a basically sound position as of 1998: the share of nonperforming loans in the total declined to less than 10 percent; the aggregate risk-based capital-to-asset ratio was well above the Basle Committee recommended minimum; and the control and monitoring of the foreign exchange exposure of financial institutions was strengthened (Table 1). However, there was also a pronounced decline in profitability, and (especially in 1997) a boom in consumer and in foreign currency lending that may have involved lending to unhedged borrowers.

Capital adequacy

109.   The capital adequacy of Polish banks is generally regarded as satisfactory. Polish regulations for capital adequacy conform to the Basle standards, with capital adequacy ratios that exceed the 8 percent risk-weighted ratio and risk weights that are more conservative than those of the *Basle Core Principles* (BCP). Newly-established banks have to maintain a capital ratio of 15 percent during the first year of operation, 12 percent the second year, and 8 percent thereafter. The minimum capital requirement is ECU 5 million.

110.   Commercial banks in Poland have generally maintained their capital adequacy ratios well above the regulatory minima, with about three quarters of banks maintaining ratios above 12 percent. The median risk-based capital ratio for commercial banks was 15.5 percent at end-September 1998, having declined from 17–18 percent during 1995–97. Meanwhile, the number of banks not meeting the minimum 8 percent standard has fallen from 18 banks to 5. The aggregate solvency ratio for the banking system was at 8.5 percent at end-September 1998, with about 80 percent of capitalization reported to be core capital. Cooperative banks also improved their capital ratios during the period. About half of the cooperative banks maintained ratios of 12 percent or more, and the number of cooperative banks not meeting the minimum 8 percent standard fell from 424 (out of 1612) banks at end-1994 to 93 (out of 1208) cooperative banks at end-September 1998.

Foreign exchange exposure

111.   Commercial banks' direct exposure to foreign exchange risk seems well-managed. The limits on open foreign currency positions were significantly tightened at the beginning of 1999, and are monitored daily by the General Inspectorate for Banking Supervision (GIBS). The new regulations cover on- and off-balance sheet risks, with the latter defined to cover derivative transactions in a comprehensive manner, including swaps and options as well as currency-linked transactions.[4] In addition, the new regulations have introduced limits on net open positions in nonconvertible currencies (2.5 percent of capital on individual currency exposures, and 5 percent on overall exposures), and have eliminated a 40 percent maximum currency position limit that was defined as the sum of the absolute long and short currency positions. The limit on net open positions in an individual currency (15 percent of capital) and the overall limit on the net open currency position (30 percent of capital) have been retained. The NBP has also developed a system to monitor off-balance sheet risks. All banks are required to report their open currency positions on a daily basis.

112.   Banks have recently become increasingly exposed to indirect foreign currency risk as a result of the rapid increase in foreign currency lending and currency-linked lending. Driven by the wide interest differential between zloty and foreign currency loans, the stock of foreign

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[4]The latter transactions have been offered by banks that do not have a foreign exchange license, and which had not been subject to the limits on open foreign exchange positions.

currency loans increased by 71 percent during January-September 1998, boosting the share of foreign currency loans in total loans by 7 percentage points to 24 percent during the period. Part of this lending was to households—including for residential mortgages—suggesting that some of the loans may be to unhedged borrowers. Corporations are also reported to have significant unhedged borrowing in foreign currencies. While borrowers in foreign currencies have gained from the appreciation of the zloty combined with low interest rates on foreign currencies, it is not clear to what extent loan servicing difficulties would result in the event of a sharp depreciation of the zloty. The adoption of inflation targeting in Poland will entail additional exchange rate flexibility, which could increase the riskiness of foreign currency loans.

113.   Commercial bank off-balance sheet activity in foreign exchange has also expanded sharply. Off-balance sheet items were 12.6 times the capital of foreign banks, and 6.3 times the capital of domestic banks at the end of the third quarter in 1998, compared to 7.8 times and 4.5 times at the end of 1997, respectively. A large part of this activity is related to operations in foreign exchange. Discussions with commercial bankers indicate that banks plan to expand these activities further in 1999.

Sectoral credit concentration

114.   Bank lending in Poland does not seem overly concentrated in any sector. Lending to the booming real estate sector—which was a major factor in banking crises in countries where real estate bubbles burst—has been minimal, and corporations are reported not to be highly leveraged. Exposure to Russia is also reported by the NBP to have been low (less than 0.5 percent of bank assets), and in the summer of 1998 the GIBS acted swiftly to require commercial banks to provision against this exposure. However, with the effects of Russia's 1998 financial crisis on the Polish economy not yet fully apparent, it is possible that the banking sector could still be affected adversely by the repercussions.

115.   Consumer lending—which rose by more than 30 percent in 1998—is also an area with potential risks. Banks do not have long experience in this area, and the collateral system is relatively new and untested. A downturn in economic activity could therefore cause servicing difficulties for some consumer loans.

Security holdings and maturity mismatches

116.   Polish banks hold large amounts of securities. The share of securities in commercial bank assets has been around 30 percent in recent years, making the banking system vulnerable to large fluctuations in security prices. Forty-five percent of these securities carry maturities of one month or less, while 35 percent have maturities longer than one year. Given the projected decline in interest rates in Poland, commercial banks are likely to benefit from changes in the value of securities, although the possibility of an unanticipated rise in interest rates cannot be excluded.

117.   The maturities of commercial bank assets and liabilities do not seem to be excessively mismatched (Figure 3). The amounts of assets and liabilities with maturities of one month or less—which constitute about one half of commercial banks' balance sheets—are comparable (such assets were 91 percent of liabilities at end-September 1998). However, there seems to be significant maturity transformation from the 3–12 month maturity to longer term maturities. At end-September 1998, assets with maturities of 3–12 months were only 60 percent of liabilities with the same range of maturities, while assets with maturities longer than one year (which comprise 30 percent of assets) were close to five times the liabilities with the same maturity. This maturity transformation does not necessarily mean additional risks for the banking system, as longer term assets may be quite liquid. Moreover, commercial banks can hedge these risks in forward markets, activities that are not captured by balance sheet entries.

118.   The NBP does not have limits on maturity mismatches in foreign currencies, notwithstanding the strengthening of controls over banks' open foreign currency positions. As a result, banks are not discouraged from relying on short-term sources of foreign funding.

Nonperforming assets

119.   The ratio of nonperforming loans (NPL) in relation to commercial bank claims has declined sharply in recent years.[5] NPL were reduced by the government issuance of bank restructuring bonds, which allowed banks to write off loans, increase provisions, and help borrowers to restructure and return to profitability. From 40 percent of total loans in the early 1990s, the proportion of NPL declined to 10.5 percent at the end of 1997, and to 9.7 percent at the end of the third quarter of 1998. The decline in this ratio in 1998 reflected a rapid rise in lending, as the stock of classified loans rose 12 percent during the period. Most of the increase in the stock of NPL was in zloty loans, although in percentage terms, nonperforming foreign currency loans rose at a more rapid pace. The proportion of zloty NPL declined slightly from 10.8 to 10.6 percent, while the proportion of nonperforming foreign currency loans fell from 9.1 percent to 6.8 percent (reflecting the low stock of foreign currency NPL at the beginning of the period combined with the rapid rise in foreign currency lending). Given that the bulk of these loans were made recently, it is too early to assess their repayment performance. A large part of these loans may be unhedged, although the income of some households and enterprises may be connected to the exchange rate.

Profitability

120.   Bank profitability declined in 1997–98 from a relatively high level. The average (pretax) return on assets fell from 3.6–3.7 percent in 1995–96 to 2.6 percent in 1997, and to 1.9 percent during the first three quarters of 1998. The return on equity fell from 68 percent in

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[5]The classification of NPL conforms to the Basle guidelines.

Figure 3.   Poland: Maturity Structure of Commercial Bank Assets and Liabilities

Sept. 30, 1998
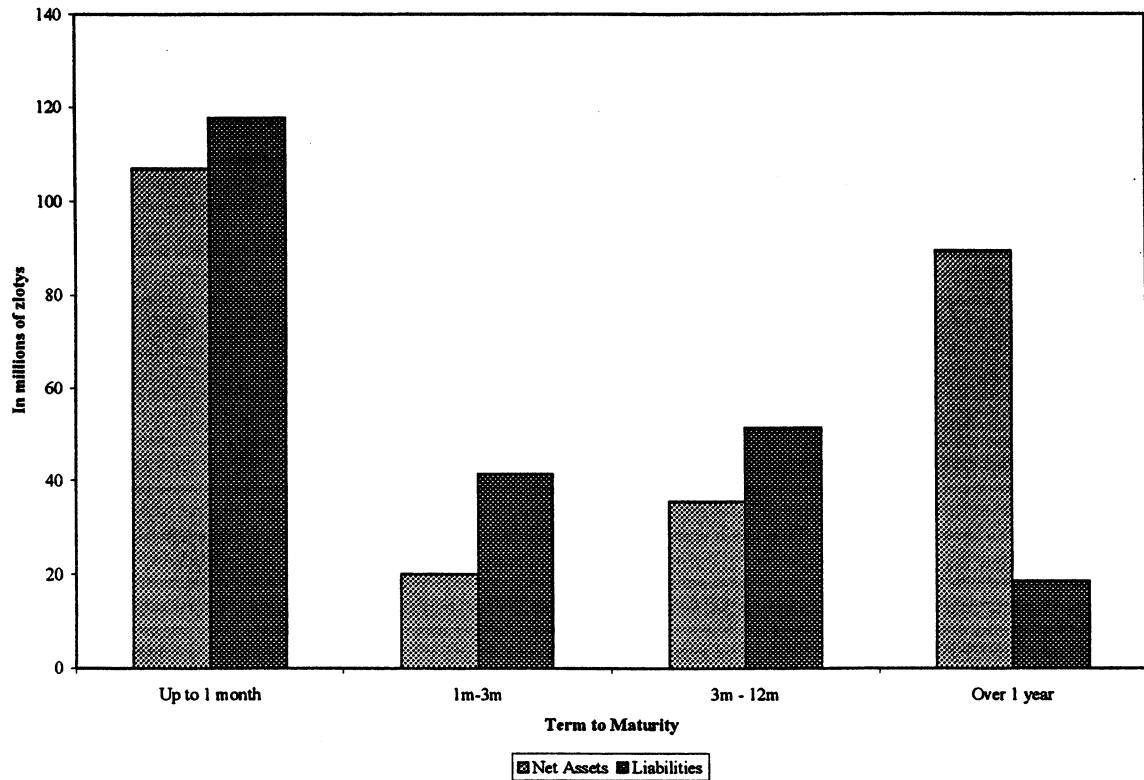
1996 to 42 percent in 1997, and to about 21 percent in the first three quarters of 1998. The
reduction in profitability reflected a contraction in interest margins, an increase in reserve
requirements in 1997, and provisioning for loans to Russian entities in 1998. Further pressures
on profitability can be expected in 1999 since interest rates and margins are likely to continue
falling with the prospective decline in inflation and with increased competition among banks;
the GIBS reported that almost 73 percent of net income of core banking operations of
commercial banks was derived from interest rate spreads in 1998. The loss of exports to
Russia and other eastern markets may also adversely affect profitability in 1999.

C.   Macroeconomic Factors that Affect the Financial System

121.   Overall macroeconomic conditions in 1999 are projected to remain conducive to the
healthy development of the financial system. Real GDP growth is expected to remain
relatively robust despite a deceleration, while inflation is projected to continue to fall. The

high proportion of domestic investment that is financed by net inflows of foreign direct investment, the low corporate leverage ratios, the small proportion of real estate financed by mortgages, a broadly appropriate real exchange rate, declining government recourse to bank financing, and the strong official international reserves position also point to a macroeconomic environment conducive to further deepening of the financial system. However, the projected softening in aggregate growth, if concentrated in a few sectors of the economy, could lead to stresses in the financial system, and the decline in interest rate margins, which has reduced bank profitability, is likely to continue.

122.   External vulnerability indicators do not suggest short-term risks to financial stability (Figure 4). External reserves are comfortable—equivalent to seven months of imports—and significantly exceeded the level of public and private sector short-term external debt at the end of 1998; these levels are considerably higher than in comparable emerging economies. Poland's gross external debt amounted to US$41 billion at end-September 1998, equivalent to 28 percent of GDP, while the external debt service ratio amounted to 7 percent of imports of goods and services. Poland also appears relatively unlikely to suffer from the adverse effects of a reversal in capital flows. Moreover, should there be a reversal of these flows, this is not likely to cause difficulties for the external reserve position and could well help the NBP manage domestic liquidity. Even though the current account deficit is projected to increase in 1999, it is expected to continue to be largely covered by foreign direct investment inflows.

123.   Also suggesting strength in the banking system is the limited contagion from the Russian financial crisis of August 1998. The immediate effects of the crisis included a sharp (one-third) drop in the stock market, a nearly 10 percent depreciation of the zloty, and a sharp increase in interest rate spreads relative to advanced economy rates. However, by November, Polish banks and corporations had returned to the international credit markets, the stock market had recovered some of its losses, and the zloty was at 7–8 percent above its central rate by the end of the year.

D. Bank Regulation and Supervision

The structure of banking supervision

124.   The two main pieces of legislation that establish the legal framework for the banking system are the National Bank of Poland Act and the Banking Act, both passed in January 1998. The Banking Act contains a number of prudential provisions and reflects the Polish banking system's development. It also recognizes the need for further liberalization. Poland's desire to join the EU is also reflected in the two Acts, and several of the EU directives on financial markets have been incorporated in law.

125.   In terms of banking system regulation, the most significant element of the new NBP Act is the establishment of the Commission for Banking Supervision (CBS). The CBS is an operationally independent body, chaired by the President of the NBP. The scope and

Figure 4.   Poland: Comparison of Financial and Balance of Payments Vulnerability Indicators
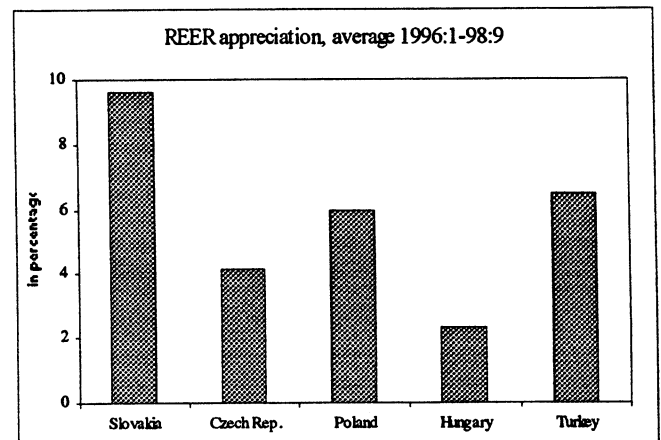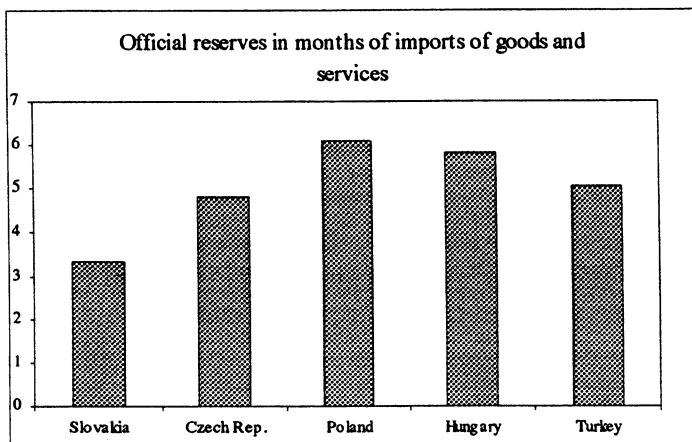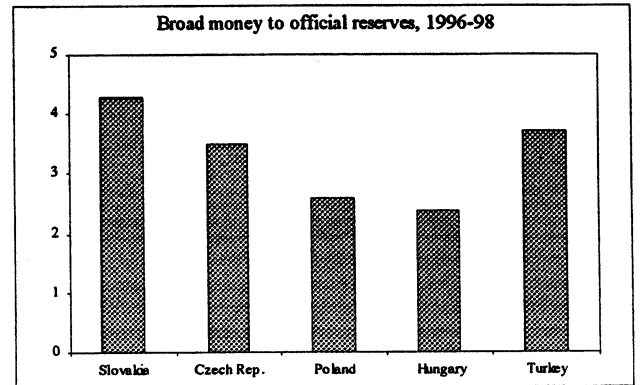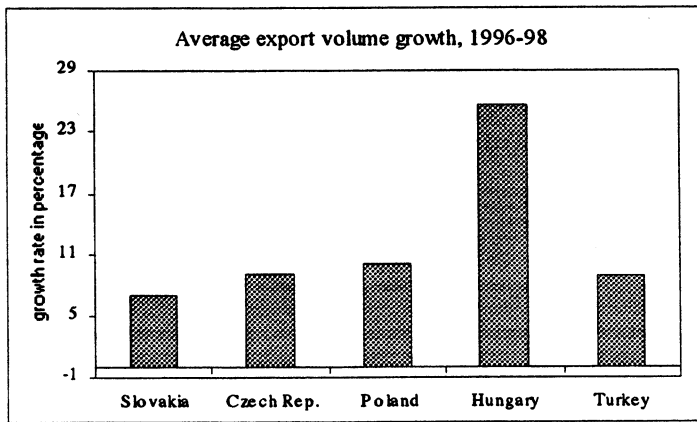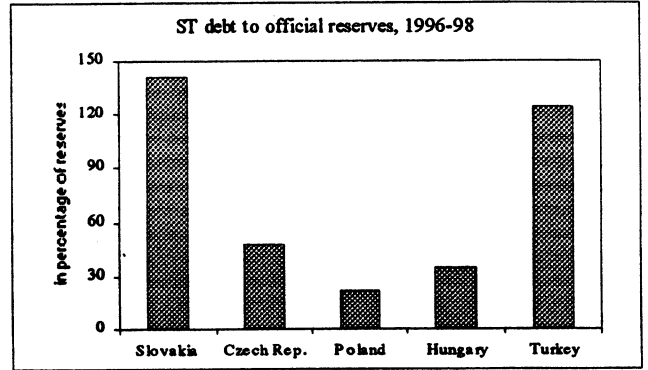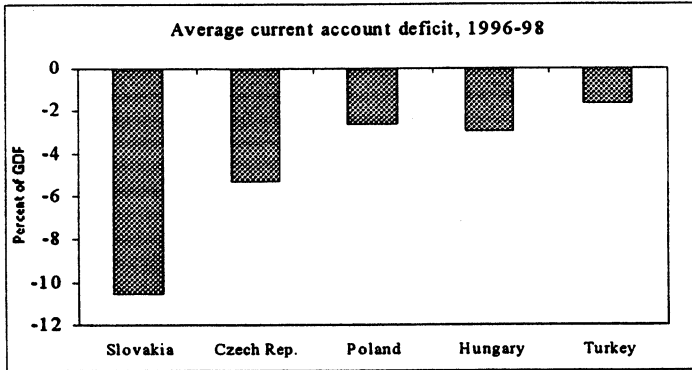
principles of supervision are set out in the NBP Act and in the Banking Act. The Banking Act specifies the licensing requirements for banks, empowers the CBS to withdraw licenses, and gives the CBS access to relevant information (except for consolidated supervision) through on-site examination of banks and their branches. The CBS also has the obligation to require banks to hold adequate loan provisions, to discourage unsound banking practices, and to impose corrective measures when appropriate. These can include the removal of managers in the event of a breach of prudential regulations or of unsafe and unsound banking activities, as well as calling for conservatorship and/or bank liquidation. The Banking Act requires external auditors of banks to notify the CBS immediately of any facts revealed during the audit that would indicate criminal behavior, a violation of banking regulations or of sound banking practices, circumstances that would endanger the interests of the bank's customers, or the possibility of a negative or an adverse opinion on the bank's accounts.

126. The NBP Act stipulates that bank examiners (from the GIBS) shall have appropriate education and professional experience. The GIBS employs a staff of 540, of which 200 are at headquarters in Warsaw and 340 are at NBP branches. Supervision is coordinated at headquarters.

127. Banking supervision focuses on monitoring compliance with prudential requirements. The GIBS conducts on-site examinations and off-site analyses to monitor bank operations and to help identify risks. Its operations have been strengthened by increasing the frequency of on-site comprehensive, specific, and targeted examinations; the development of an on-site examination manual, and the provision of training courses for examiners. A new regulatory reporting system has been developed to utilize a comprehensive system of call reports that should enable the production of analytic financial reports on banks. Donor-funded assistance has been aimed at drafting regulations and reporting forms, and at holding seminars and workshops for bank supervisors.

Accounting and public disclosure

128. The Accounting Act of September 29, 1994 (effective January 1, 1995) improved the accounting standards for Polish banks. Article 81 of the Act gave the NBP the power to regulate bank accounting principles. The NBP accordingly issued Regulation No. 1/1995 on detailed bank accounting principles and on the compilation of notes to financial statements, and Regulation No. 10/1995 on detailed procedures for the compilation by banks of consolidated financial statements. These regulations have now been revised and issued by the GIBS as Regulations No. 1 and 2/1998. The law and regulations are reported to be in conformity with the relevant EU directives, i.e., the Fourth Council Directive 78/660 EEC on the Annual Accounts of Certain Types of Companies; Directive 86/635 EEC on the Annual Accounts and Consolidated Accounts of Banks and Other Financial Institutions, and International Accounting Standards (IAS). Consolidated accounts are now obligatory, and banks have to report their accounting policies, cash flow statements, and detailed notes to the accounts with published statements. In general, the public disclosure requirements for banks

appear to be in line with international best practice and are transparent. Detailed information on banking sector performance is also issued and published by the GIBS and NBP on a regular basis.

Loan loss classification and provisioning

129.   Polish banks are required to classify all loans, other assets and guarantees, and contingent liabilities that could result in a material distortion of a bank's financial condition. There are four categories: standard, substandard, doubtful, and loss. Classification is based upon the timeliness of payments and the financial condition of the borrower. These criteria work independently, so a borrower will be downgraded if its financial condition deteriorates, even if payments continue to be made on time. Loan charge-offs, however, are carried out when there is no hope of recovery and a lengthy court process is complete. A loan is classified as substandard when principal and interest are past due for one to three months and/or the financial situation of the borrower may jeopardize timely repayment of relevant assets; the provisioning requirement is 20 percent. The classification into doubtful and loss categories is a function of additional specific criteria. For doubtful exposures, the past due criteria are three to six months and the provisioning requirement is 50 percent. For loans classified as loss, the past due criteria are six months or more, and the provisioning requirement for loss is 100 percent.

130.   In 1993 the Law on Restructuring Enterprises facilitated the recapitalization of banks through the use of restructuring bonds to provision against nonperforming loans. To be eligible for the bonds, banks had to prove their intention to restructure bad loans. As a result, banks worked with their state-owned customers to restructure loans and return the enterprises to profitability so that debts could be serviced. Subsequently, banks were also allowed to reschedule, sell, and write off bad loans, or swap them for equity. The improvement in the quality of borrowers as a result of restructuring, coupled with favorable economic conditions, an increase in bank equity, a better understanding of customer needs, improved bank lending policies, and strict prudential rules on nonperforming loans and write-offs have resulted in a steady decline in the share of nonperforming loans in the total.

Internal controls and auditing

131.   Banks are required to maintain written accounts of their procedures and safeguards for internal risk management. The GIBS assesses each bank's overall risk management procedures during its on-site inspection. So far, only foreign exchange risk is regulated. Recommendations for the control of interest rate risk are being prepared, but this risk is not reflected in the bank's required capital; operational risks connected with it are subject to GIBS recommendations.

132.   According to the Banking Act, banks must have an internal audit function that verifies the legality and propriety of the activity conducted by the bank and ensures that accounts and reports filed by the bank are true and accurate. The law does not directly require the

independence of internal auditing. At present, the internal auditors of the majority of banks are appointed by the management board, and report to it. However, the charters or statutes of some banks make internal auditors accountable to the supervisory board and independent from management; this practice conforms with internationally accepted principles and Basle recommendations.

The implementation of prudential regulations

133.   The Banking Act, Chapters 11 and 12, provides the CBS with the legal authority to implement prudential regulation; to obtain necessary information from any institutions under its supervision; to close a bank, penalize a bank and its president, vice president or other members of the management board; and to prescribe various remedial actions. The procedures for bank rehabilitation, liquidations and bankruptcies are directly monitored by the CBS. The Law is fairly detailed on these matters, and provides the CBS with strong legal grounds and with an obligation to act when necessary.

Supervision on a consolidated basis

134.   The Polish banking system is based on the universal banking model, where banks are allowed to engage directly in a range of financial activities, including the purchase and sale of securities for their own account. Banks may also own other financial service providers including leasing companies, insurance companies, and securities firms. As a result, universal banks dominate the Polish financial sector, and banks own financial service firms.

135.   While this arrangement has advantages, it may also pose risks to the financial system, notably the risk of contagion among financial groups. The authorities are aware that reducing these risks will require that supervision of all financial groups be on a consolidated basis, and that steps should be taken to ensure that no member of any financial group escapes effective supervision.[6]

136.   Banks are required to disclose annual accounts on a consolidated basis as well as for each bank subsidiary. However, financial sector supervision in Poland is not currently carried out on a consolidated basis. In fact, some financial institutions, notably leasing companies, are not supervised at all. The legal grounds for conducting consolidated supervision are said to be lacking, but proposed amendments to the Banking Act are expected to allow for consolidated supervision in 1999.

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[6]In some parts of the world, this development has extended further to combine financial firms with industrial and commercial companies into multipurpose groups, creating new structures in the economy. In some cases, aspects of these arrangements have proved undesirable, and have obliged the authorities to take measures to discourage such structures. Fundamentally, the concern is that one should be cautious about combining or consolidating activities that are unrelated.

137.   The CBS is required by law to provide the Securities and Exchange Commission (SEC), the Agency for Supervision of Pension Funds (ASPF), and the State Agency of Insurance Supervision (SAIS) with information necessary for these agencies to supervise the relevant institutions. These agencies are not required to provide information to the CBS. According to Article 131 of the Banking Act, the principles and procedures applicable to providing such information should be specified in agreements between the Commission for Banking Supervision and the regulatory agencies. No agreements to that effect have yet been signed, but, there is informal cooperation among the agencies as their board members serve on several of these agencies. A draft agreement between the CBS and the SEC has been drawn up, and could serve as a model for agreements with other agencies.

138.   Polish banks have subsidiaries, branches, and representative offices in other countries, and foreign banks operate in Poland. The Banking Act regulates the application and licencing procedures for cross-border establishments; authorization is granted by the CBS in agreement with the Ministry of Finance. The Basle Committee has issued four "minimum standards" for a cross-border entity: (a) all international banks and banking groups should be supervised by a home-country authority that capably performs consolidated supervision; (b) the creation of a cross-border banking establishment should receive the prior consent of both the host and home-country supervisory authorities; (c) home-country supervisors should possess the right to gather information for cross-border banking establishments, and (d) if any of the foregoing minimum standards are not met to the satisfaction of the host-country supervisor, it can impose restrictions and prohibit the operation of the foreign banking establishment. The CBS does not conduct on-site supervision of domestic banks operating abroad and, therefore, does not comply with this Basle recommendation. At present, no formal agreement or memorandum of understanding (MoU) exists between the CBS and foreign supervisory authorities, and there are no experiences or procedures for cooperation with banking supervisory agencies from foreign countries with banks in Poland. However, the CBS reportedly intends to sign a MoU with the Financial Services Authority in England, and plans are to enter into agreements with the bank supervisory authorities in the Netherlands, Germany, France, Lithuania, Ukraine, and the United States. The legal framework for agreements with foreign supervisory authorities has been established in the Banking Act.

Compliance with the Basle Core Principle

139.   The CBS assessed its compliance with the Basle Core Principles for Effective Banking Supervision (BCP), and submitted its findings to the Basle Committee prior to the ICBS meeting in Sydney, Australia in October 1998. However, fulfillment of the BCP by any country is not, and is not intended to be, an "exact science." Banking systems differ from one country to another and so do other domestic circumstances. Bank activities are presently changing rapidly around the world. Theories, policies, and best practices of supervision are rapidly evolving. It is internationally acknowledged that the BCP should be seen as minimum standards. Laws and regulations constitute only one aspect of effective supervision. They have limited value if the capacity, competence, and integrity of the supervisory staff are inadequate. That being said, there is a constant need for upgrading supervisory capabilities and skills to

keep up with supervisory developments, such as new regulations, the evolution of best practices in banking supervision, and developments in banking operations. According to the self assessment, the CBS concludes that at present it has fulfilled 15 of the BCPs fully, another seven are partly fulfilled, and three are not fulfilled at all. The BCP 1(5) on "legal protection for supervisors," BCP 20 on "the ability of the supervisors to supervise the banking organization on a consolidated basis," and BCP 23 on "global consolidated supervision, adequately monitoring and applying appropriate norms to all aspects of the business conducted by banking organizations worldwide, primarily at their foreign branches and subsidiaries" are not implemented.

The year 2000 issue

140.   The banking supervisory authorities have requested external auditors to disclose in their auditing statements for 1998 their assessment of the banks' readiness for the year 2000. The GIBS plans to conduct targeted on-site examinations on this issue, as well as on information technology in general.

IV. INFLATION TARGETING IN POLAND: LINKAGES BETWEEN MONETARY POLICY INSTRUMENTS AND INFLATION[1]

141.   With inflation in some advanced transition economies in Central and Eastern Europe now dropping to single-digit levels, monetary policymakers in several countries, including Poland, are showing a growing interest in analyzing inflation dynamics. How is inflation influenced by shifts in monetary policy instruments, such as interest rates, monetary aggregates, or the exchange rate? How does it respond to changes in other economic variables, such as wages, the unemployment rate, or capacity utilization? Given that Poland's Monetary Policy Council (RPP) announced in the autumn of 1998 that it was adopting an inflation targeting framework for the conduct of monetary policy, these policymakers are particularly interested in knowing the characteristics and timing of the linkages between monetary policy instruments and the rate of inflation. Understanding the strength of these relationships and their lags will help them to better calibrate their monetary policy actions, improve their timing, and better achieve their inflation targets.

142.   This chapter looks at the inflation process in Poland in the 1990s, and attempts to answer these questions by examining the statistical linkages between inflation and monetary policy instruments and other so-called leading indicators of inflation.[2] Because transition economies have tended to experience large increases in administered prices, wide swings in relative prices, and the introduction of new Western-style taxes (like the VAT) that have tended to complicate the inflation story, it is important to look at measures of underlying inflation. In general, it appears that explicitly taking account of movements in individual components of the standard price indices over the transition period helps to reveal an underlying inflation process that is more stable and predictable than might appear at first. In addition, theoretically sound linkages between several monetary policy variables and underlying inflation are discernable in the data. In particular, the exchange value of the zloty and to some extent broad money seem to be statistically related to movements in inflation; in certain cases it can be shown that they Granger cause shifts in inflation. Even so, the statistical power of monetary policy instruments and leading indicators of inflation to "explain" inflation in Poland still appears to be modest.

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[1]Prepared by Robert Wescott.

[2]For a more complete analysis of the inflation process in Poland, including in-period and out-of-period simulations with a simple multivariate econometric model, see Peter Christoffersen and Robert Wescott, "Is Poland Ready for Inflation Targeting?" IMF Working Paper, (forthcoming).

## A. Why Underlying Inflation is an Important Concept in Poland

143.   The decline in CPI inflation in Poland during the period 1992–98—from roughly 50 percent a year to under 10 percent—has been impressive (Figure 1). Even in seasonally adjusted terms, however, substantial monthly fluctuations remain, as seen in the lower right panel of Figure 1. Most analyses of the inflation process presume that price changes for the main components of goods and services that make up the CPI are distributed normally for each period of time. This normality is important for at least two reasons. First, as Pujol and Griffiths (1996) and Ball and Mankiw (1995) argue, skewness or high variability of price movements across categories can impart a bias toward higher overall inflation because of menu effects.[3] The argument runs as follows: if costs increase sharply in a few spending categories, higher prices are likely to be passed along to consumers because it is worth it for restaurant owners to pay the fixed costs of re-printing menus, but if costs decline slightly in a number of other spending categories (such that prices on average might otherwise remain unchanged), these prices may not be lowered to consumers because of the fixed costs of re-printing menus. That is, these authors argue that inflation could increase simply because of a non-normal distribution of price increases across the various categories of the CPI. Second, normality makes its easier to characterize and forecast CPI inflation. Unfortunately, however, evidence of skewness and excess kurtosis in the distribution of price changes across the categories of the CPI (for a given time period) is widespread in many countries, and Poland is no exception.[4]

144.   Prima facie evidence of the non-normality of Polish price changes is suggested by Figure 2. The top panel shows a histogram of seasonally-adjusted monthly price changes across the 33 main categories of goods and services in Poland's CPI that were observed over 78 months (January 1992 to June 1998)—that is, 2,574 price changes. Each price change is standardized by subtracting the average monthly inflation across the 33 groups for each time period and dividing by the corresponding standard deviation. An alternative way of looking at the possible normality of these price changes is shown in the middle panel of Figure 2. Here, after seasonal adjustment, the price changes in each of the 33 categories is transformed by subtracting a third-degree polynominal time-trend to adjust for transition effects (i.e., the fact that inflation has been falling over time). After this adjustment, the remaining data values are standardized as in the top panel. For reference, the bottom histogram represents a standard

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[3]In fact, Wozniak (1998), using a modeling framework suggested by Ball and Mankiw, has estimated that the large administered price increases associated with transition in Poland produced substantial upward inflationary pressures between 1989 and 1997.

[4]See for example, Andersen and Gudmundsson (1998) on Iceland, and Debelle and Lim (1998) on the Philippines.
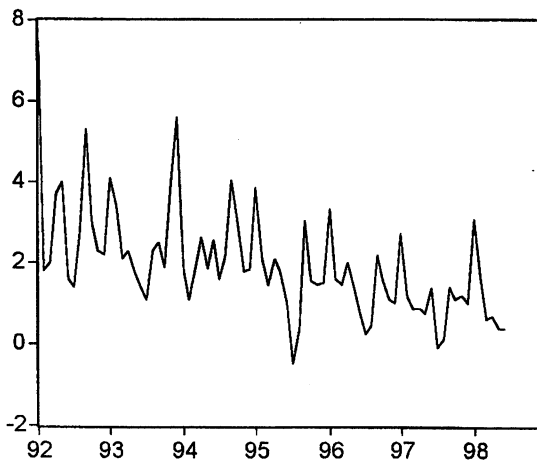
Figure 1. Poland:
Consumer Price Index, 1992-1998
(percent change, as indicated)
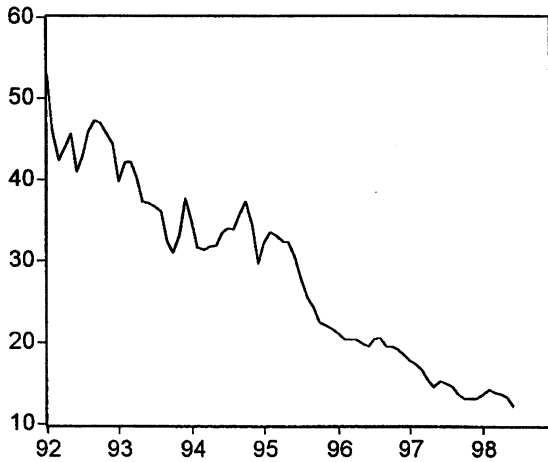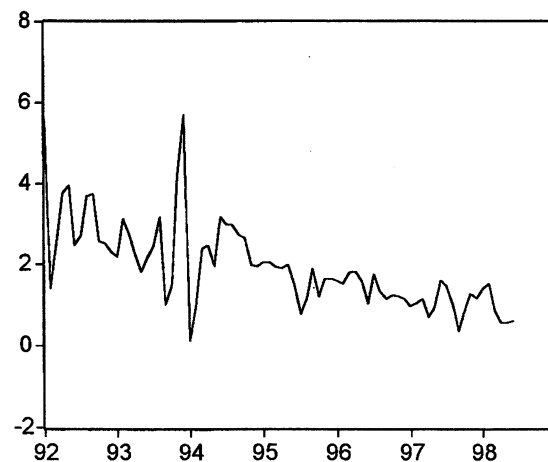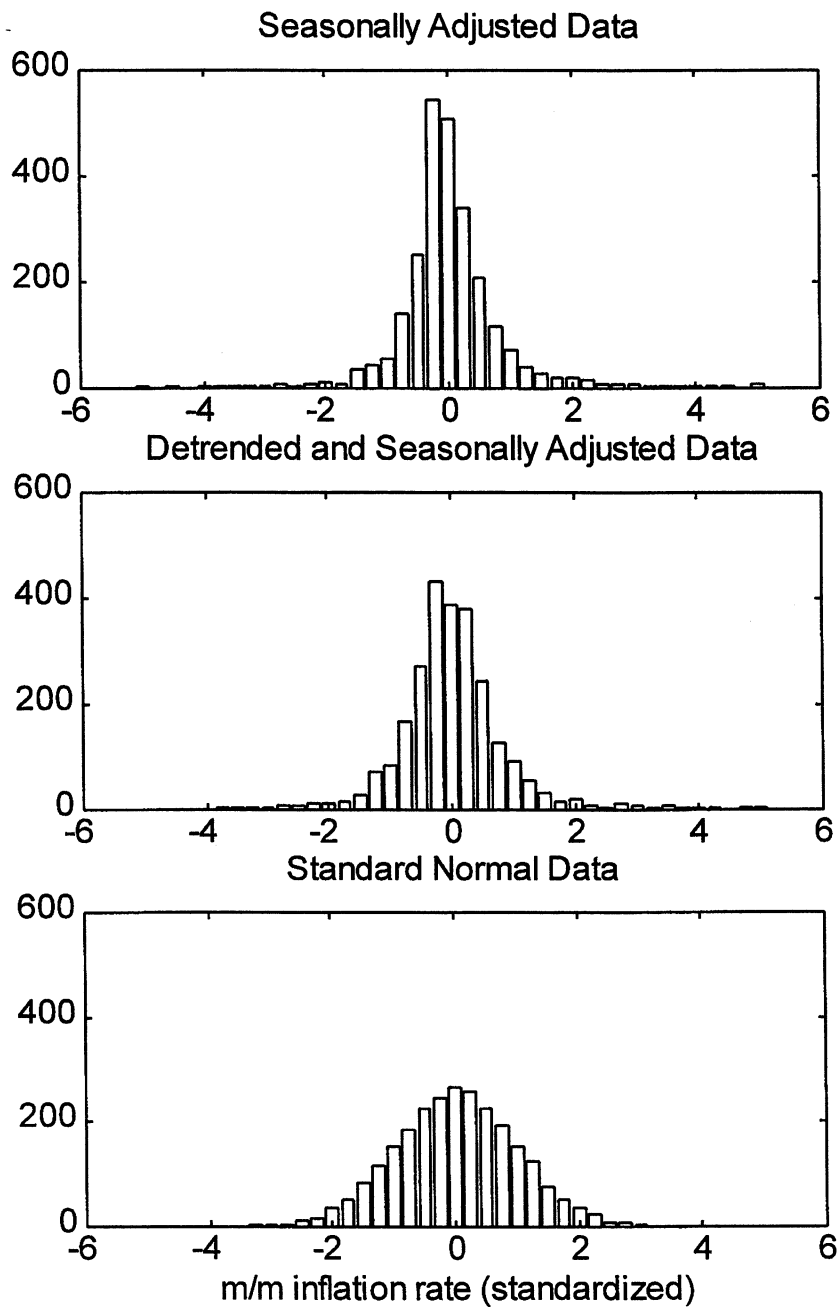

Year-on-year (y/y)

y/y (seasonally adjusted)

Month-on-month (m/m)

m/m (seasonally adjusted)

Figure 2. Poland:
Histograms of Monthly Price Increases

Note: See text for explanation of the construction of these histograms.

normal distribution. Strong departures from normality are evident in the top and middle histograms, especially considering the existence of numerous observations four and five standard deviations away from the means. This suggests that there have been a surprisingly great number of very large price increases (and large price declines) in Poland.[5]

145.   Transition dynamics, including large swings in relative prices, jumps in administered prices, and tax changes help to account for at least some of this non-normality, as does the heavy weight in the Polish CPI on foodstuffs, which are affected by weather conditions. The role played by administered prices and the prices of goods subject to tax changes, which together account for roughly one quarter of the CPI by weight in the period under consideration, are documented in Figure 3.[6] Clearly many of these thirteen CPI categories show large discrete price movements. The cumulative effect is to make inflation appear less stable over time, less predictable, and harder to model.

B. Estimating Underlying Inflation

146.   The preceding discussion highlights the potential difficulties of trying to explain statistically the short-run movements in headline CPI inflation, as well as the possible drawbacks of using headline CPI inflation as a policy target. Because of these shortcomings, it is desirable to develop alternative statistical measures of inflation that behave in more a predictable manner. Often such measures are called "core inflation" or "underlying inflation." This chapter follows closely the work of Bryan, Cecchetti and Wiggins (1997) on the concept of underlying inflation because their approach provides an operationally straightforward definition of underlying inflation as a trimmed measure of a long-run moving average of CPI inflation. Their concept is to remove from the aggregate monthly CPI measure price changes in categories that were either unusually large or unusually small to give a better picture of price trends without these outliers. Trimmed-mean underlying inflation is defined as:

$$\bar{x}_{\alpha,t} = \frac{1}{1-2\alpha/100} \sum_{i \in I_{\alpha,t}} \omega_{i,t} x_{i,t}$$

where α is the percentage trimmed in each tail, $\omega_{i,t}$ is the weight on commodity I at time t, and $x_{i,t}$ is the month-on-month price increase in commodity I at time t. $I_{\alpha,t}$ is the set of commodities left after trimming at time t—that is, the I's remaining after the α smallest and α largest increases in the prices of individual index components at time t have been removed. Notice

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[5]This non-normality is confirmed by statistical tests. Applying a Jarque-Bera test for the null hypothesis of normality leads to a rejection at the 1 percent level for both the top and middle panels of Figure 2.

[6]The last panel in Figure 3 depicts an index of the thirteen government affected goods and service prices weighted together by their respective weights in the CPI (and re-based).

Figure 3. Poland: Administered Prices (percent change, month-on-month)
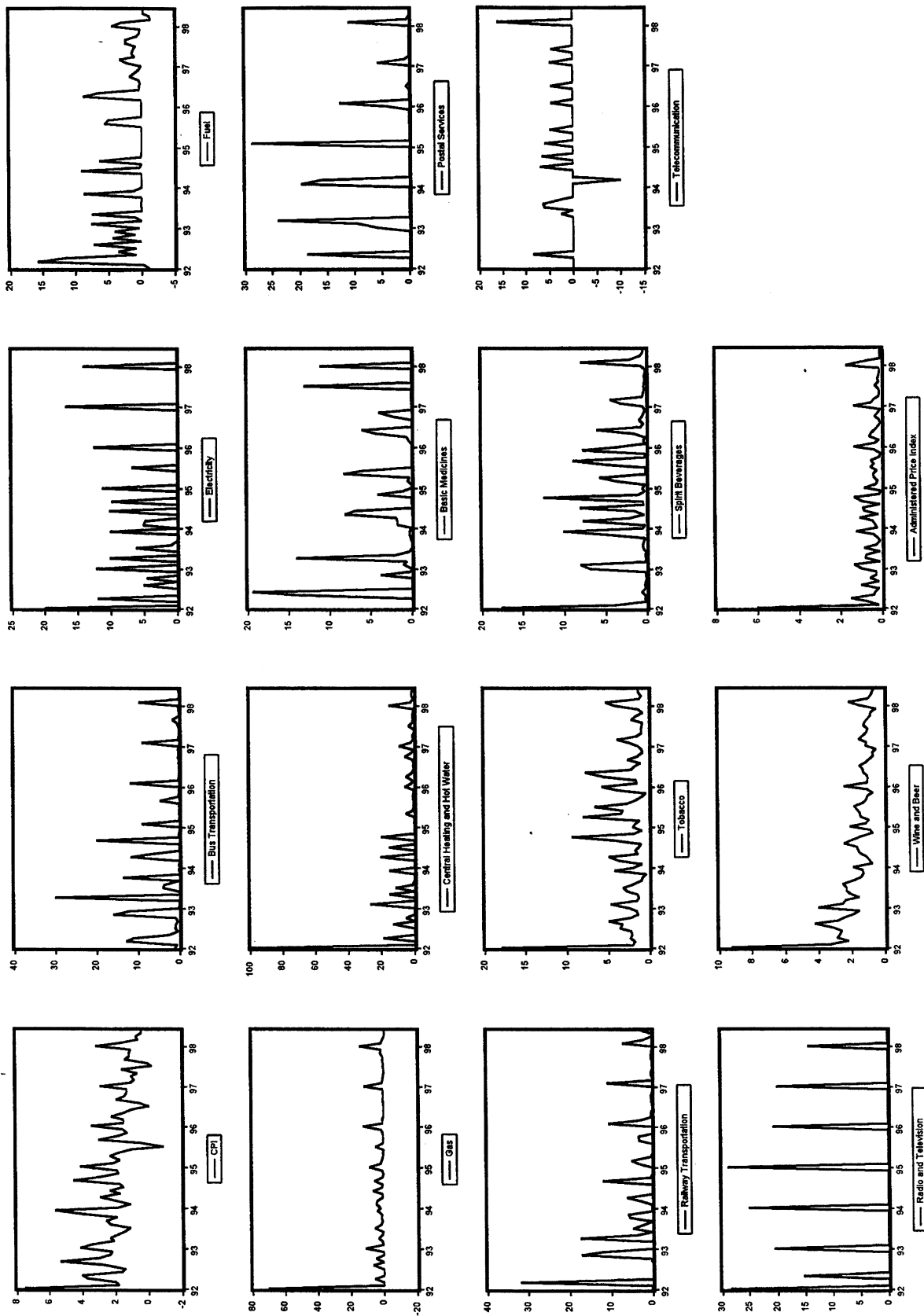
that the sample average corresponds to setting α to zero, and the sample median to setting α to 50. The weights in the trimmed mean are updated annually to adjust for the fact that the weights in the CPI are updated annually.

147. Note that it is categories with certain weights that are removed from each tail, not a specific number of categories. For example, with $\alpha=20$, it is possible that in March 1995, the food category alone might represent 20 percent of the weight of the CPI and have the lowest inflation that month, so only food prices would be deleted from the lower tail in the computation of the CPI that month. On the other hand, it might be necessary to remove the price effects of say, fuels, education services, and telecommunications from the upper tail in the computation of the CPI if these three categories represented 20 percent of the weight in the CPI and these three categories had the highest inflation that month.

148. A key question is how much should be trimmed to develop the best measure of underlying inflation? In other words, which value should the parameter α take on? Bryan *et. al.* (1997) re-sample with replacement from each commodity group (picking a random month in a random year for each commodity) to build up a large Monte Carlo sample of trimmed means. This is repeated for different values of α and the mean squared error (MSE) for each α across the Monte Carlo replications is computed as:

$$\text{MSE}(\alpha) = \frac{1}{J}\sum_{j=1}^{J} (\bar{x}_{\alpha,j} - \mu)^2$$

149. Finally, the α corresponding to the lowest MSE is chosen. The same procedure is followed here. The data underlying the histograms in Figure 2 are sampled with replacement, and the result is that according to the MSE criterion, approximately 20 percent of the CPI weights should be trimmed from each tail, or a total of 40 percent of all weights in the CPI. In other words, this trimmed mean CPI concept relies on the pricing signal coming from the 60 percent of the weights of the CPI that have the most average price trends for any given month. The CPI categories whose price changes are included in or excluded from the trimmed inflation measures can change every month.

150. Turning specifically to the case of Poland, four alternative monthly time series of CPI inflation measures are apparent: headline CPI inflation (CPI), which is the sample average; α = 20 percent trimmed mean inflation (T20); median inflation (MED), which is the inflation rate of the median CPI component at time t; and CPI inflation excluding administered prices (UPI). The month-on-month seasonally adjusted increases for these four CPI measures in Poland are plotted in Figure 4. Notice that even when administered prices are excluded in the UPI inflation measure, many outliers remain in the time series of monthly changes in the price index, while the 20 percent trim (T20) and the median inflation (MED) measures seem

Figure 4. Poland:
Four Measures of Consumer Price Index

— m/m (seasonally adjusted)

— Excluding Administered Prices

— 20 Trimmed Mean

— Median
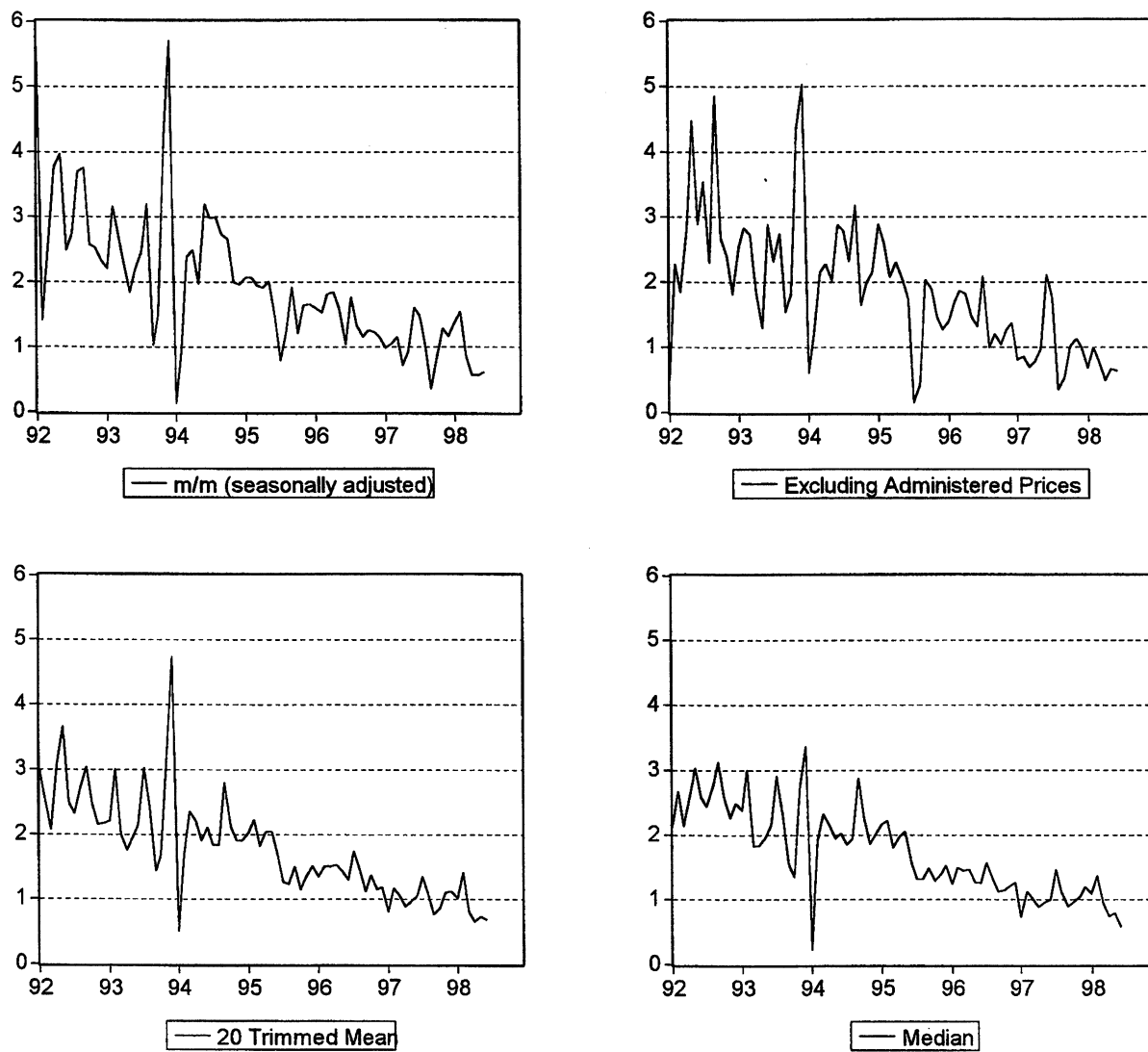
Note: All measures are month-on-month increases in seasonally adjusted prices.

reasonably smooth except for large outliers in December 1993 and January 1994.[7] Not surprisingly, the different inflation measures are quite correlated. Headline CPI is most highly correlated with the 20 percent trimmed inflation (0.90), followed by median inflation (0.83), and lastly, private-sector inflation (0.76).

C. Linkages Between Monetary Policy Instruments and Inflation

151.   In this section, the statistical linkages between monetary policy instruments and inflation are examined, as are the linkages between various so-called leading indicators of inflation and inflation. The variables investigated are listed in Table 1. The list includes monetary aggregates, interest rates, exchange rates, real activity variables, labor market variables, and foreign price indices. The data sources include the Polish Central Statistical Office and the National Bank of Poland. Most variables are seasonally adjusted and transformed by taking logarithms.[8]

Bivariate Relationships

152.   To illustrate the bivariate relationships between the four candidate inflation measures and the monetary policy instruments and potential leading indicators of inflation, the P-values from bivariate Granger causality tests are presented in Table 2. Each of the four panels corresponds to one of the four inflation measures, and each column to an economic indicator.[9] Each panel contains eight rows corresponding to 1 though n lags in the bivariate regressions, where n = 1, 2,.., 8. Each entry in the table gives the P-values for the null hypothesis that the indicator does not Granger-cause the inflation measure—that is, the probability of obtaining a sample which is even less likely to conform to the null-hypothesis of no Granger causality than the sample at hand. Values smaller than 5 percent are presented in bold italics. That is, these bold values indicate cases where there is evidence that movements in variables tend to Granger cause movements in inflation.

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[7]These outliers reflect the effects of a change of government and large expected movements in administered prices.

[8]Using conventional augmented Dickey-Fuller (ADF) tests, the null hypothesis of a unit root cannot be rejected for most of the indicators. Taking first differences and reapplying the ADF tests, the presence of a unit root is typically rejected when including one lag. When including more than one lag on the right-hand-side, the power of the ADF tests drops, and the null hypothesis of a unit root again often cannot be rejected. Although an argument could be made for keeping the interest rates in levels, it was decided to work with first differences of all variables in the analysis below.

[9] The variable mnemonics are listed in Table 1.

Table 1. Poland: Variable Definitions and Transformations

Name	Definition	Seasonal Adjustment	Logs
Measures of Inflation			
cpi	Consumer Price Index	X	X
upi	CPI: excluding administrative prices	X	X
t20	CPI: 20 percent of weights trimmed in each tail	X	X
med	CPI: median of all components	X	X
adm	Index of administered prices	X	X
Potential Leading Indicators of Inflation			
aip	Industrial production	X	X
ars	Retail sales (nominal)	X	X
ars_r	Retail sales (real)	X	X
we_grs	Wages (gross)	X	X
we_net	Wages (net)	X	X
lulcm	Unit labour costs	X	X
lur	Unemployment rate	X	X
ppi	Producer prices	X	X
fmb	Broad money	X	X
fmn	Narrow money	X	X
fad	Domestic assets	X	X
firr	NBP refinance rate (real)	X	
fid6ma	Deposit rate (6-month, real)	X	
fitb13w	T-bill rate (13 week, real)	X	
fitb52w	T-bill rate (52 week, real)	X	
fibor1m	WIBOR (1 month, real)	X	
wse	Warsaw Stock Exchange index		X
neer	Nominal effective exchange rate		X
prcpizl	Foreign CPI (in Zlotys)	X	X
prppizl	Foreign PPI (in Zlotys)	X	X
enda	Nominal exchange rate (Zl per $, average)		X
reerc	Real effective exchange rate (CPI)	X	X
reerp	Real effective exchange rate (PPI)	X	X
gcbal	Central Gov't surplus in percent of revenues	X	

Note: All variables are observed at the monthly frequency. Based on the unit roots tests, all variables are applied in first differences. Real interest rates are computed by dividing one plus the nominal interest rate by one plus the 12-month percent change in the headline consumer price index, then subtracting one and multiplying by 100.

Table 2. Poland: P-values from Bivariate Granger Causality Tests

cpi

Lags	adm	aip	ars	ars_r	we_grs	we_net	lulcm	lur	ppi	fmb	fmn	fad	firr	fid6ma	fitb13w	fitb52w	fiborlm	wse	neer	prcpizl	prppizl	enda	reerc	reerp	gcbal
1	0.01	0.46	0.71	0.64	0.85	0.37	0.62	0.00	0.27	0.97	0.28	0.97	0.47	0.52	0.14	0.41	0.45	0.80	0.02	0.01	0.04	0.13	0.01	0.12	0.92
2	0.42	0.41	0.81	0.80	0.93	0.55	0.86	0.00	0.02	0.04	0.75	0.86	0.02	0.01	0.01	0.09	0.03	1.00	0.00	0.00	0.00	0.26	0.00	0.01	0.14
3	0.69	0.56	0.98	0.99	0.94	0.71	0.64	0.00	0.09	0.16	0.96	0.57	0.01	0.02	0.01	0.25	0.01	0.54	0.01	0.00	0.00	0.68	0.00	0.03	0.33
4	0.54	0.43	0.33	0.41	0.79	0.14	0.78	0.00	0.37	0.13	0.79	0.73	0.13	0.10	0.20	0.41	0.15	0.39	0.01	0.00	0.01	0.77	0.00	0.06	0.42
5	0.53	0.27	0.26	0.36	0.85	0.18	0.78	0.00	0.46	0.20	0.87	0.86	0.15	0.16	0.27	0.58	0.12	0.52	0.02	0.00	0.02	0.25	0.00	0.11	0.52
6	0.41	0.35	0.32	0.44	0.57	0.06	0.81	0.00	0.30	0.40	0.98	0.79	0.27	0.24	0.25	0.22	0.32	0.50	0.01	0.00	0.02	0.52	0.00	0.04	0.49
7	0.50	0.43	0.06	0.06	0.61	0.05	0.72	0.01	0.22	0.63	0.85	0.87	0.07	0.11	0.06	0.04	0.19	0.02	0.01	0.00	0.01	0.52	0.00	0.01	0.56
8	0.89	0.50	0.06	0.04	0.73	0.06	0.74	0.02	0.33	0.58	0.93	0.74	0.10	0.09	0.21	0.16	0.31	0.05	0.01	0.00	0.01	0.63	0.00	0.02	0.67

t20

Lags	adm	aip	ars	ars_r	we_grs	we_net	lulcm	lur	ppi	fmb	fmn	fad	firr	fid6ma	fitb13w	fitb52w	fiborlm	wse	neer	prcpizl	prppizl	enda	reerc	reerp	gcbal
1	0.54	0.68	0.03	0.08	0.67	0.52	0.79	0.00	0.02	0.41	0.73	0.94	0.01	0.03	0.08	0.07	0.06	0.60	0.03	0.02	0.06	0.07	0.07	0.22	0.70
2	0.33	0.68	0.07	0.14	0.88	0.65	0.72	0.01	0.01	0.15	0.71	0.95	0.01	0.01	0.00	0.05	0.02	0.42	0.00	0.00	0.00	0.15	0.00	0.01	0.36
3	0.59	0.47	0.24	0.33	0.87	0.79	0.49	0.05	0.06	0.21	0.74	0.62	0.01	0.03	0.02	0.33	0.04	0.74	0.00	0.00	0.00	0.27	0.00	0.00	0.42
4	0.11	0.32	0.84	0.85	0.53	0.39	0.61	0.32	0.28	0.14	0.43	0.60	0.09	0.16	0.33	0.82	0.28	0.68	0.00	0.00	0.00	0.33	0.00	0.01	0.75
5	0.30	0.49	0.47	0.74	0.73	0.41	0.79	0.14	0.15	0.29	0.74	0.97	0.26	0.31	0.61	0.98	0.33	0.76	0.00	0.00	0.00	0.31	0.00	0.01	0.89
6	0.27	0.56	0.60	0.85	0.78	0.53	0.85	0.14	0.05	0.44	0.82	1.00	0.39	0.38	0.78	0.99	0.31	0.80	0.00	0.00	0.00	0.45	0.00	0.00	0.92
7	0.12	0.67	0.65	0.87	0.89	0.58	0.85	0.10	0.10	0.58	0.89	1.00	0.32	0.25	0.48	0.72	0.46	0.12	0.00	0.00	0.00	0.60	0.00	0.02	0.88
8	0.25	0.70	0.11	0.24	0.90	0.75	0.92	0.21	0.16	0.65	0.99	1.00	0.39	0.43	0.55	0.82	0.76	0.07	0.00	0.00	0.00	0.77	0.00	0.01	0.90

med

Lags	adm	aip	ars	ars_r	we_grs	we_net	lulcm	lur	ppi	fmb	fmn	fad	firr	fid6ma	fitb13w	fitb52w	fiborlm	wse	neer	prcpizl	prppizl	enda	reerc	reerp	gcbal
1	0.95	0.65	0.02	0.11	0.43	0.62	0.65	0.01	0.01	0.05	0.28	0.73	0.00	0.01	0.02	0.01	0.03	0.56	0.12	0.07	0.22	0.17	0.26	0.49	0.29
2	0.04	0.88	0.03	0.06	0.70	0.87	0.38	0.08	0.01	0.09	0.53	0.94	0.00	0.01	0.01	0.02	0.04	0.43	0.00	0.00	0.00	0.42	0.00	0.05	0.29
3	0.25	0.32	0.04	0.05	0.84	0.98	0.08	0.35	0.01	0.14	0.49	0.60	0.01	0.05	0.04	0.28	0.23	0.64	0.00	0.00	0.00	0.43	0.00	0.03	0.64
4	0.02	0.20	0.24	0.21	0.65	0.78	0.05	0.82	0.07	0.13	0.30	0.75	0.12	0.15	0.23	0.67	0.56	0.51	0.00	0.00	0.00	0.52	0.00	0.01	0.87
5	0.15	0.35	0.67	0.67	1.00	0.95	0.04	0.60	0.07	0.43	0.59	0.98	0.44	0.37	0.74	0.92	0.88	0.52	0.00	0.00	0.00	0.20	0.00	0.01	0.83
6	0.11	0.47	0.81	0.78	0.96	0.89	0.07	0.72	0.03	0.49	0.51	0.86	0.56	0.44	0.88	0.93	0.87	0.59	0.00	0.00	0.00	0.30	0.00	0.02	0.85
7	0.02	0.59	0.73	0.74	0.98	0.95	0.06	0.66	0.05	0.62	0.65	0.82	0.21	0.07	0.28	0.45	0.50	0.06	0.00	0.00	0.00	0.43	0.00	0.02	0.81
8	0.12	0.54	0.64	0.74	0.94	0.99	0.21	0.72	0.16	0.76	0.92	0.94	0.23	0.08	0.42	0.61	0.41	0.08	0.00	0.00	0.00	0.40	0.00	0.00	0.72

upi

Lags	adm	aip	ars	ars_r	we_grs	we_net	lulcm	lur	ppi	fmb	fmn	fad	firr	fid6ma	fitb13w	fitb52w	fiborlm	wse	neer	prcpizl	prppizl	enda	reerc	reerp	gcbal
1	0.10	0.65	0.32	0.77	0.96	0.48	0.34	0.00	0.01	0.18	0.91	0.72	0.01	0.03	0.08	0.07	0.06	0.91	0.04	0.04	0.16	0.16	0.39	0.44	0.54
2	0.62	0.64	0.72	0.90	1.00	0.83	0.68	0.01	0.00	0.12	0.82	0.99	0.00	0.01	0.01	0.05	0.02	0.94	0.00	0.00	0.00	0.08	0.00	0.00	0.33
3	0.18	0.75	0.95	0.99	1.00	0.83	0.49	0.04	0.01	0.05	0.44	0.44	0.01	0.03	0.02	0.33	0.04	0.98	0.00	0.00	0.00	0.15	0.00	0.00	0.49
4	0.01	0.80	0.23	0.07	0.80	0.98	0.59	0.16	0.10	0.16	0.72	0.53	0.09	0.16	0.33	0.82	0.28	0.44	0.00	0.00	0.00	0.13	0.00	0.00	0.89
5	0.39	0.52	0.02	0.01	0.89	0.83	0.50	0.28	0.65	0.96	0.80	0.95	0.26	0.38	0.61	0.98	0.33	0.58	0.00	0.00	0.00	0.42	0.00	0.03	0.47
6	0.05	0.66	0.02	0.02	0.76	0.52	0.63	0.42	0.09	0.96	0.70	0.97	0.39	0.38	0.78	0.99	0.31	0.10	0.00	0.00	0.00	0.43	0.00	0.04	0.47
7	0.14	0.77	0.04	0.02	0.82	0.77	0.62	0.22	0.20	0.97	0.90	0.98	0.32	0.25	0.48	0.72	0.46	0.13	0.00	0.00	0.00	0.55	0.00	0.00	0.68
8	0.02	0.83	0.00	0.01	0.69	0.82	0.74	0.32	0.27	0.97	0.89	0.98	0.39	0.43	0.55	0.82	0.76	0.12	0.00	0.00	0.00	0.54	0.00	0.01	0.67

153.   A few features are common across the inflation measures in Table 2: the effective exchange rates and foreign price indices (neer, reerc, reerp and prcpizl, prppizl) are significant across lag orders for all four inflation measures. Other variables that are significant for some inflation measures for some lags include broad money (lur), the interest rate variables (fidbma and fitb13w), administered prices (adm), and the retail sales activity variables (ars and ars_r). On the other hand, among the stock price index (wse), the fiscal deficit (gcbal), the nominal exchange rate (enda), and the labor cost variables (lulcm), none appear significant at any lag order. Some differences across inflation measures emerge. The unemployment rate (lur) appears highly significant for headline inflation, for example, but is much less significant for the other inflation measures. All in all, these tests lead us to the conclusion that foreign prices and the exchange rate seem to have had the strongest tendency to cause movements in Polish inflation during the past seven years, and that real sector activity and labor market factors— factors that are usually considered to be important in advanced economies—have played relatively little role in influencing inflation in Poland.

Impulse Responses

154.   In Figure 5, the impulse responses from a 4th order bivariate VAR for the trimmed inflation measure (T20) are plotted as they relate to the monthly economic indicators.[10] Each panel in Figure 5 gives the percentage point change in month-on-month trimmed inflation at time $t+I$, I=1, 2,.., 12, for a one standard deviation increase in the monetary policy instrument or the potential leading indicator of inflation at time t.[11] Also depicted are plus/minus two (asymptotic) standard error bands. These impulse responses illustrate an important drawback of crude Granger causality testing: it provides no information about whether the sign of the (dynamic) bivariate relationship is correct from the point of view of economic theory. The unemployment example mentioned above illustrates this point. While the unemployment rate appeared to be significant in Granger causing headline inflation in Table 2, it is clear from Figure 5 that the dynamic relationship between unemployment and inflation is economically incorrect, because an increase in unemployment increases inflation.[12]

155.   Unfortunately, much uncertainty surrounds the estimated impulse responses in Figure 5. The standard error bands usually contain zero, especially for the headline inflation measure, meaning that the absence of any statistical relationship cannot be ruled out. This is

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[10]Figures for the impulse responses for the other three inflation measures are not presented in the interests of saving space, but generally they show slightly less significant results than for the mean-trimmed inflation case (T20).

[11] The lag-length is fixed at 4 months in the bivariate regressions underlying Figure 5.

[12]This is probably because both the unemployment rate and CPI inflation in Poland have been falling monotonically for most of the 1990s and labor markets have not yet reached equilibrium.

Figure 5. Poland:
Impulse Responses of Trimmed Inflation to Indicator Shocks
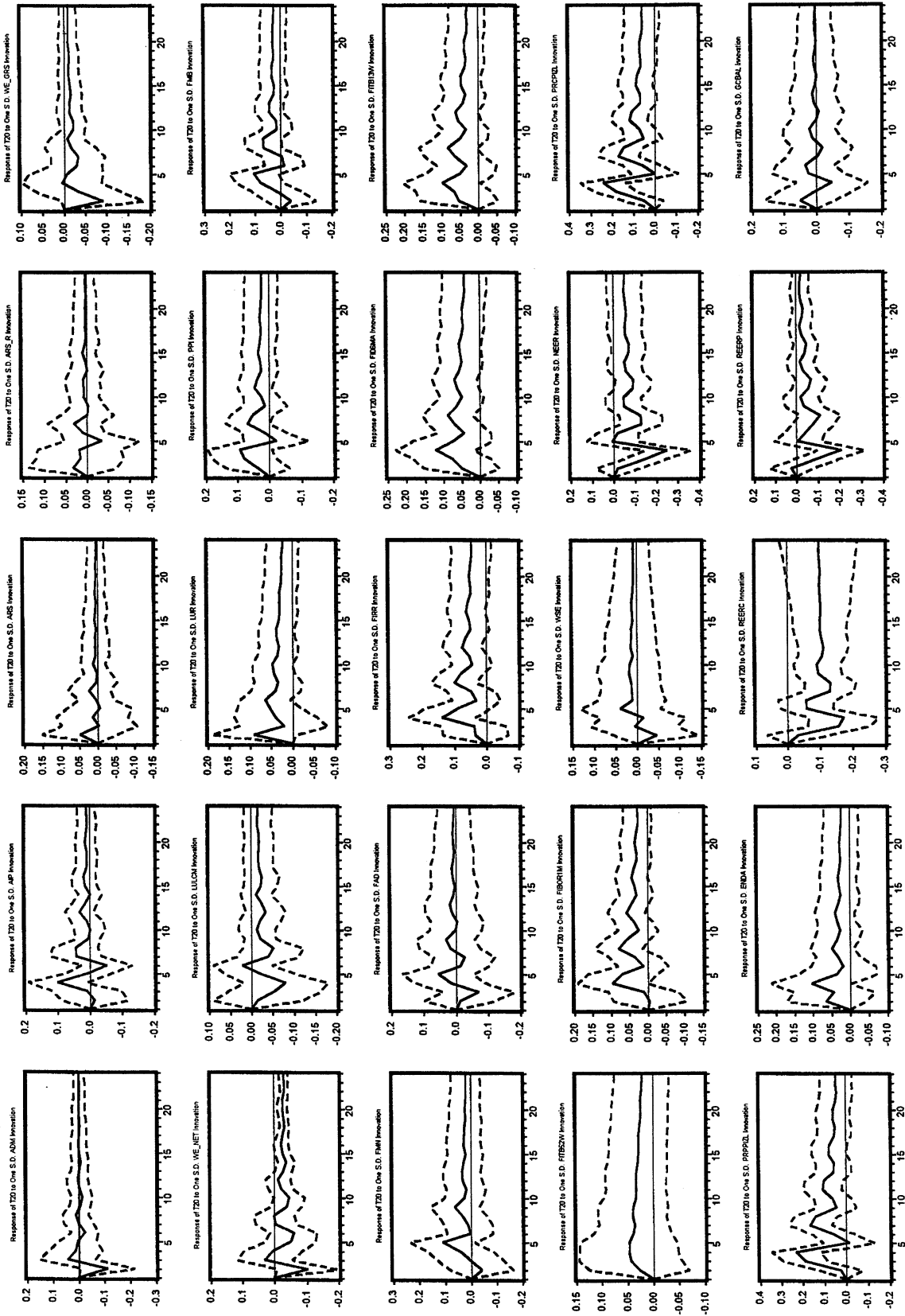
partly due to the high lag order chosen for the VAR. The strongest relationships between the monetary policy variables and the various CPI inflation measures again appear to come from the effective exchange rate (neer) and foreign inflation in zloty (prcpizl). The broad money measure (fmb) has the right sign and is marginally significant, although this is not the case for headline CPI inflation. The activity variables rarely appear to be significant in signaling movements in inflation. Only the retail sales variable is marginally relevant in signaling movements in median inflation. The interest rate variables generally show a positive relationship with inflation, which is counter-intuitive from the point of view of economic theory.

D. Conclusions

156.   Large monthly price changes in various components of the CPI, often due to substantial changes in administered prices, have tended to cloud movements in inflation in Poland during the transition process and make inflation appear less regular and less explainable than it probably is in fact. For this reason, the concept of underlying inflation is helpful in trying to understand and quantify the inflation process in a transition economy like Poland. The construction of various underlying inflation measures seems to be particularly useful from an analytical view, especially an optimally mean-trimmed CPI inflation measure (such as the T20 inflation series developed in this chapter), which trims away large transitory price movements. This hypothesis is supported by Granger causality testing, which generally finds stronger statistical linkages between changes in monetary policy instruments and movements in underlying CPI inflation than between shifts in these policy instruments and movements in headline CPI inflation.

157.   Impulse response tests indicate that only a few monetary policy variables seem to be significant in explaining CPI inflation in Poland during the 1990s. The most significant effects appear to come from movements in the exchange rate and in foreign inflation, although movements in broad money are marginally significant in explaining movements in CPI inflation. In most of these cases, leading indicators of inflation also are better at explaining movements in underlying CPI inflation than headline CPI inflation, presumably because underlying inflation is more stable.

158.   The lack of a firm statistical linkage between policy interest rates and inflation is not surprising, given that both variables have been falling monotonically in Poland over the sample period (1992–98). Given such historical data trends, it would be extremely difficult for statistical tests to identify the kind of normal negative relationship between these two variables suggested by economic theory and monetary transmission channel analysis. As the Polish economy continues to mature in coming years, it is likely that the relationship between the policy interest rates and inflation will become more regular and will begin to illustrate the expected negative relationship. In the meantime, as the statistical basis for more normal relationships strengthen, it will be important for monetary policymakers in Poland to rely on economic theory as well as benchmarks from other countries as guides for their monetary policy decisions.

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