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**The Rise and Fall of the Pyramid Schemes in Albania**

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**Abstract**

What lessons can be drawn from the unprecedented growth and spectacular collapse of financial pyramid schemes in Albania? This paper discusses the origins of the pyramid schemes and the way the authorities handled them. It also analyzes the economic effects of the pyramid schemes, concluding that despite the descent into anarchy triggered by the schemes' collapse their direct effects on the economy are difficult to specify and appear to have been limited. Finally, the paper argues that prevention of pyramid schemes is better than cure, and that governments and international financial institutions should be vigilant in clamping down on frauds.

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## I. INTRODUCTION

This paper tells the story of the Albanian pyramid scheme crisis of 1996–97, analyzes its causes and consequences, and attempts to draw some lessons from it. The pyramid scheme phenomenon in Albania is important because its scale relative to the size of the economy was unprecedented, and because the political and social consequences of the collapse of the pyramid schemes were profound. At their peak, the nominal value of the pyramid schemes' liabilities amounted to almost half of the country's GDP. When the schemes collapsed, there was uncontained rioting, the government fell, and the country descended into anarchy and a near civil war in which some 2,000 people were killed. This paper explores the causes of the rise of the pyramid schemes, and addresses the question of what could have been done to prevent it. It also examines the handling of the crisis. The paper then discusses the economic effects of the pyramid scheme phenomenon, and concludes that despite the tremendous political effects, these have been surprisingly limited. Finally, it suggests lessons that can be drawn from the crisis by other governments and by the international financial institutions.

## II. THE RISE OF THE PYRAMID SCHEMES

### A. The economic background to the emergence of the pyramid schemes

Albania started the transition process from central planning as the most isolated, backward, and poor country in Europe. Albania had for centuries been largely unknown and inaccessible,<sup>2</sup> and from 1945 to 1985 its isolation was compounded by the rigid dictatorship of Enver Hoxha. Communism in Albania was founded on complete reliance on central planning, the elimination of almost all forms of private property, and the idealization of national self-reliance as a guiding tenet of economic policy. In practice, this led to a virtual cutting off of the country from outside influences and information.<sup>3</sup> The result was that when transition eventually began, in 1991, the country had been reduced to desperate poverty and the vast bulk of the population was completely unfamiliar with market institutions or practices.

Albania's progress during the early transition years was impressive. Like all countries starting transition, Albania faced initial shocks: output fell by nearly half between 1989 and 1992, and

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<sup>2</sup>In the 1780s Edward Gibbon described Albania as "a country within sight of Italy which is less known than the interior of America." Norman Davies, "Europe: A History", Oxford, Oxford University Press, 1996. p645.

<sup>3</sup>Economic conditions in Albania before transition are described in detail in "Albania: From Isolation Toward Reform" (IMF Occasional Paper No. 98, IMF, Washington D.C., September 1992). Hoxha's hostility to outside influences is illustrated by his breaking successively with the USSR and China on the grounds that they were too moderate, and, more concretely, by his building of around half a million bunkers—one for every six Albanians—for defense against foreign invaders.

inflation rose to triple digits. However, during the 1993–95 period GDP growth averaged close to 10 percent while inflation fell to single digits and external imbalances were reduced sharply (see Table 1, below). The impressive macroeconomic performance reflected in large part wholesale dismantling of controls, and early privatization of agriculture, retail trade, and small- and medium-sized enterprises, and improved financial discipline at the budgetary and state enterprise levels.

However, by early 1996 it was clear that many problems had not been solved, and that others were reemerging. Structural reform had stalled, especially in the critical area of banking. The approach of parliamentary elections in May 1996 led the government to indulge in pre-election wage increases, and to put off introduction of a VAT, with the result that the budget deficit and inflation began to rise again. Nor did things improve after the elections, which were won decisively by the ruling Democratic Party but were widely believed to have been rigged. From this point on, the government's political authority was fragile, and its will to take difficult decisions limited. This was to have significant implications for the unfolding pyramid scheme crisis.

### **B. Problems in the Financial Sector**

One of the most important causes of the growth of the pyramid scheme phenomenon was the inadequacy of the formal financial system. The three state banks which dominated the deposit-taking market (holding over 90 percent of deposits) were not reliable intermediaries of savings, and private banks were slow to emerge, and not particularly interested in attracting domestic currency deposits, devoting their attention mostly to trade financing. The problem in the state banks was not low interest rates: to ensure that depositors were offered interest rates which are positive in real terms, the Bank of Albania set minimum interest rates on time deposits, and from mid-1993 onward these were consistently at levels above the prevailing rate of inflation. However, the payments system was seriously inadequate. According to a September 1996 survey, the average completion time for payment transactions between accounts at different branches of the same state-owned bank was 5–6 days, and the completion time when the transaction involved accounts at different state-owned banks could exceed 15 days.<sup>4</sup> As a result of these problems, and of a general distrust of the banks, the public tended to hold an unusually high proportion of their financial assets in cash (at end-1995 the currency/deposit ratio was 64 percent), and were on the lookout for alternative investment opportunities.

On the lending side, the banks' problems were even worse, leading to the emergence of an informal credit market. Banking supervision and regulation was rudimentary, and this, combined with a culture under which loans from state banks were often regarded by borrowers as not requiring repayment, led to a growing bad loan problem. By the end of

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<sup>4</sup> Foundation for Enterprise Finance and Development: "From a Target Group-Oriented Lending Institution to a Target Group-Oriented Bank", September 1996.

Table 1. Albania: Basic Economic and Social Indicators, 1991-1997

	1991	1992	1993	1994	1995	1996	1997 Est.
	(Percent change)						
Real GDP	-28.0	-7.2	9.6	9.4	8.9	9.1	-7.0
Retail prices (during period)	104.1	236.6	30.9	15.8	6.0	17.4	42.1
	(In percent of GDP)						
Saving-investment balance							
Foreign saving 1/	19.4	36.1	28.1	14.4	9.7	11.5	14.2
Domestic saving	-13.3	-50.9	-14.9	3.5	11.3	9.0	-2.2
Public 2/	-27.4	-21.9	-8.7	-5.5	-3.3	-7.6	-8.7
Private	14.1	-29.0	-6.2	9.0	14.6	16.6	6.6
Investment	6.1	5.2	13.2	17.9	21.0	20.5	12.0
Public	6.1	4.0	9.5	8.6	8.2	4.5	4.1
Private	0.0	1.2	3.7	9.3	12.8	16.0	7.9
Fiscal sector							
Revenues	31.7	23.5	25.7	24.5	23.9	18.3	17.0
Expenditures 3/	62.2	44.0	34.9	31.2	30.8	29.0	27.6
Domestically financed deficit	43.9	20.0	9.1	7.0	6.6	11.0	10.9
Overall deficit	43.9	20.3	14.4	12.4	10.3	12.1	12.7
Monetary indicators							
Broad money growth (in percent)	...	...	75.0	40.6	51.8	43.8	28.4
Growth in private sector credit (in percent)	...	...	...	61.4	15.9	30.5	22.0
Velocity of circulation	...	...	3.68	2.83	2.22	1.97	1.92
External sector							
Current account balance	-165	-98	-6	-118	-38	-168	-199
(in percent of GDP)	(-14.5)	-13.8	-0.5	-6.0	-2.4	-6.2	-8.6
Trade balance	-208	-454	-490	-460	-474	-692	-519
Exports	73	70	112	141	205	229	167
Imports	281	524	602	601	679	921	685
Services	-46	-121	-97	-84	-1	22	-7
Private Transfers	8	148	230	264	300	423	250
Official transfers	81	329	351	161	118	77	77
Current account balance 4/	-246	-427	-357	-279	-176	-245	-276
(in percent of GDP)	(-21.6)	-60.2	-29.1	-14.1	-7.2	-9.1	-11.9
Gross international reserves	1	72	147	204	240	280	306
(in months of imports of goods and nonfactor services)	(0.1)	1.4	2.3	3.2	3.4	3.1	4.5
Memorandum items:							
Real GDP (in billions of leks, 1990 prices)	12.1	11.2	12.3	13.5	14.7	16.0	14.9
Nominal GDP (in billions of leks)	16.4	53.2	125.3	187.9	224.7	281.0	338.9
Nominal GDP (in billions of U.S. dollars)	1.1	0.7	1.2	2.0	2.4	2.7	2.3
Lek/US\$ (end of period)	25.0	102.9	100.9	95.0	94.5	103.7	149.8
Population and Social Indicators							
Population (mid-1995, in millions)					3.3		
Urban Population (percent of total population)					37		
GNP per capita (1995, in U.S. dollars)					745		
Life expectancy at birth					73		
Infant mortality (per 1,000 live births)					31		

Sources: Albanian authorities; and Fund staff estimates and projections.

1/ Current account excluding net factor services and official transfers.

2/ Revenue (excluding grants) minus current expenditure.

3/ Commitment basis, excluding foreign financed investment.

4/ Excluding official transfers.

1994, of loans made since June 1992, when the state banks had started operations, 27 percent were nonperforming. By the end of 1995, in two of the three state-owned banks, overdue loans accounted for almost half of total outstanding loans.<sup>5</sup> In response to the banks' poor credit evaluation and loan collection the Bank of Albania imposed bank-by-bank credit ceilings. These were set at levels well below what the banks wanted and also at levels insufficient to meet the demands for credit to the private sector at prevailing interest rates. The limitations of the banking system made these measures sensible, indeed necessary, but the result was that businesses increasingly turned for credit to the informal credit market. A survey of over 200 enterprises conducted in late 1996 found that 36 percent of them had used the informal market to fund their investments, compared to 38 percent which had used bank credit.<sup>6</sup>

### C. The informal credit market and the pyramid schemes

There had been a flourishing informal market in Albania since the transition began, which was generally tolerated by the authorities. The informal market consisted partly of foreign exchange dealers (some licensed, some not) and partly of a number of companies taking deposits and making loans. These companies were informal and arguably illegal, since they were never licenced to take deposits. They grew out of a credit system based mostly on private loans from migrant workers to friends and family. According to Bank of Albania officials, loans made were generally less than US\$30,000, most companies had fewer than 8 loans outstanding, and substantial collateral was required. Informal market lending rates were high: they were around 10 percent per month in 1993, although they had fallen to 6 percent per month in the second half of 1995.<sup>7</sup> There is no record of deposit rates offered by these companies, but these were presumably also high, though somewhat lower to allow for a lending spread. Both the authorities and foreign observers, including the IMF, regarded the informal lending companies as benign, and indeed making an important contribution to growth: given the manifest deficiencies of the formal banks, these companies were probably the best intermediaries for savings in Albania, and the investments they funded among the most profitable.

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<sup>5</sup> The banks' poor credit evaluation is epitomized by the state-owned Rural Commercial Bank's making short-term loans to farmers to buy tractors and trucks. At end-1996, the tractor and truck loans still accounted for one-third of the bank's total lending and 80 percent of its bad loans. The bank was liquidated in December 1997.

<sup>6</sup> Marta Muco and Drini Salko, "Some Issues on the Development of Informal Financial Sector in Albania" unpublished paper produced for the Albanian Center for Economic Research, 1996.

<sup>7</sup> Ibid.

However, operating alongside the informal lending companies, and to some extent disguised by them, were a number of companies which also borrowed money at high interest rates, but invested on their own account rather than lending funds; it was these that either were or became pyramid schemes. The first and largest of these companies were started in 1991–92, and began collecting money shortly afterwards. During the period up to the end of 1995, these offered interest rates of 4–5 percent per month. The use to which they put their funds is uncertain. They engaged in some (usually highly visible) productive investments, and are in some cases also believed to have used borrowed funds to finance criminal activities: smuggling, illegal emigration, drugs, prostitution, and arms trafficking. Given the nature of these companies, it is not possible to establish whether they were ever solvent, in the sense of earning more from their investments and illegal activities than they were paying to depositors. It is possible that they were pyramid schemes from the day they started business. In any event, if they were not so already, they became pyramid schemes in the course of 1996.<sup>8</sup>

The distinction between the informal credit market and the pyramid schemes is a vital one, but for a long time it was difficult to see the difference between them. Both the informal credit market and the companies which invested on their own behalf drew resources from domestic savings and from flows of remittances estimated at around US\$300 million a year (about 12 percent of GDP). Both operated on the premise that there were profitable opportunities for investment in small businesses in Albania. The authorities generally shared this view, mostly regarding the borrowing companies as rare success stories among Albanian businesses, and discouraging close scrutiny. It was also difficult for outside agencies, including the IMF and the World Bank to differentiate between the two sets of companies. Neither set of companies were licensed, or subject to detailed supervision, and in the case of the companies which invested on their own behalf, their reputation for involvement in criminal activities made information difficult and even dangerous to get.<sup>9</sup> In their first warning about the danger of pyramid schemes, in late 1994, the World Bank treated the companies which invested on their own account as part of the informal credit market. Similarly, an IMF mission to advise on financial sector problems at the end of 1995 focussed mostly on the possibilities for improving the formal financial system by integrating the most positive elements of the informal market. While concerns about the possibility of criminals operating in the market were raised, the true nature of the large companies operating at this time, and the scope of their activities, was not picked up by outside observers until mid-1996.

#### **D. Legal and Governance Problems**

The legal framework available to the authorities to combat the pyramid schemes was inadequate, especially with regard to enforcement. The companies concerned were licenced

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<sup>8</sup> For a definition and description of pyramid schemes see Box 1, below.

<sup>9</sup> In 1995 an IMF consultant posed briefly as a potential investor and was quickly warned that this was not safe.

### Box 1: The Dynamics of a Pyramid Scheme

Pyramid schemes work on the principle that money paid in by later investors is used to pay artificially high returns to earlier investors. The example below shows the simplest variant.



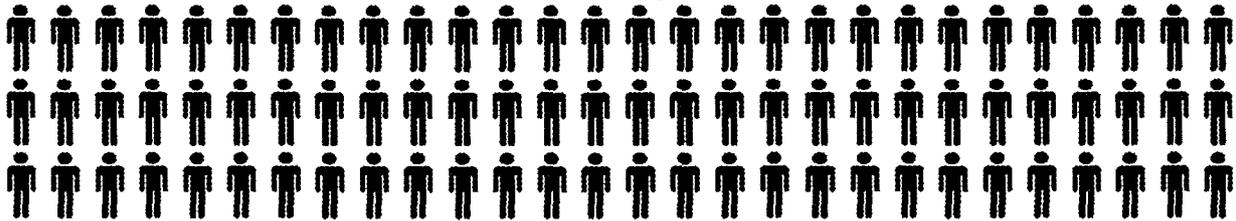
Early investors are drawn in by advertising promising high interest rates, or huge capital gains after a short period. Most schemes have a gimmick, often based on some real or imagined market inefficiency or loophole in the law.



News of the high returns spreads by word of mouth or advertising, and more people invest. Their payments are used to pay interest and if necessary principal to the early investors. More often, though, the early investors will reinvest their principal, and sometimes their interest in the hope of still higher gains. Most people, however, remain skeptical.



With a reputation for solvency based on a good payments record, which overrides doubts about the feasibility of the scheme, many more investors come into the scheme. Some remain skeptical but invest anyway, believing that they can make a quick profit and then get out before the scheme runs into trouble. For a time, the scheme appears successful. But then...



The interest and principal due to the old investors exceeds the money the scheme is able to attract from new investors. As soon as payments are interrupted confidence in the scheme evaporates. The investors rush to get their money out, but there is little to be had. What has not been paid to the early investors in interest has usually been used to buy highly visible but often not very valuable assets to make the scheme look prosperous, or has been stolen outright by the operators.

A somewhat more sophisticated version of this model is shown in Appendix I, "The Life Cycle of a Pyramid Scheme". This version is closer to the Albanian case, and captures more of the dynamics, in that the operators adapt to flagging enthusiasm or rising doubts by raising interest rates. For a while this works to attract more investors, but soon the higher interest payments force the operators to raise rates again to attract more investors. A spiral ensues until at some point either the interest payments become overwhelming or the rates offered become so implausible and the doubters so vocal that the scheme becomes unsustainable. Once the scheme first fails to make a payment the end is swift. In the Albanian case some companies managed to keep operating for almost four years, with the rising spiral of interest rates, and rapid growth of deposits taking place only in the last year. The collapse took three months.

businesses, and claimed to be operating under the Civil Code, which permitted borrowing by companies. However, they were never audited, nor do they appear to have paid profit taxes. In February 1996, a new Law on the Banking System was passed, which stipulated that “no person other than a bank shall accept household deposits, demand deposits, and deposits with an initial maturity of 12 months or less” (Law No. 8075, dated 22.02.96, Article 6). In Article 2 of the same law, “household deposits” were defined as “natural persons’ deposits”. In the view of the Bank of Albania, the borrowing companies were violating the new law, and the central bank contacted the companies to inform them that they were in the business of deposit taking, and required licenses to operate—licenses which the Governor of the Bank of Albania had no intention of giving them. However, the Chief Prosecutor took the view that the new law did not apply to the borrowing companies. Nor was he disposed to investigate the companies for fraud. The Ministry of Justice, for its part, refused to give an interpretation. It is arguable that the Bank of Albania should still have used its powers under the Banking System law to close the companies as unlicensed banks. However, given the clear reluctance of other organs of the government to move against them, and the difficulty the Bank would have had in enforcing the law against powerful companies, its failure to do so is understandable.

Indeed, there is strong evidence that the problem was not just a legal one, but one of governance, and that members of the government themselves benefitted from and supported the pyramid scheme companies. During the 1996 elections several of the major companies made campaign contributions to the ruling Democratic Party, and paid for advertisements on the election posters of Democratic Party candidates. Senior government officials frequently appeared at functions and parties organized by the companies, and in November 1996, even as the pyramid schemes began to crumble, the Prime Minister and Speaker of Parliament accepted medals to celebrate the fifth anniversary of VEFA, the largest company. This tolerance was reflected in the benign neglect of both the Ministry of Justice and the Ministry of Finance,<sup>10</sup> and in open support of the major companies by the President. Thus, from September 1995 to July 1996 the Governor of the Bank of Albania stood virtually alone in Albania urging investigation and closure of the schemes.

### III. MANIA: THE EVENTS OF 1996

Two events set the stage for the pyramid scheme mania of late 1996: the suspension of UN sanctions against the Socialist Federal Republic of Yugoslavia (SFRY) in December 1995, and the campaign and outcome of the Albanian parliamentary elections of May 1996. It was an open secret that throughout the period of UN sanctions oil and many other goods were being

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<sup>10</sup> During discussions between the IMF and the authorities in late 1996, IMF staff suggested that the tax authorities should investigate these companies, and close them if they were found to be insolvent. The staff pointed out that the Russian pyramid scheme, MMM, had initially been prosecuted not for fraud but for tax evasion. However, the authorities were unwilling to do this.

smuggled through Albania to the SFRY. Taxes on oil transit trade alone were estimated to amount to 1 percent of GDP.<sup>11</sup> The involvement of the pyramid scheme companies with the smuggling cannot be proved, but some of the largest companies started up as “trading companies” during the period of sanctions, and they were generally believed to be involved. The suspension of sanctions ended the smuggling trade. One month later, whether by coincidence or because a key source of income had disappeared and they now needed to attract more funds, the borrowing companies raised their interest rates to 6 percent per month. The May elections had a more direct impact. In reaction to uncertainty about the prospects of the ruling Democratic Party in the elections, and also to the entry of new pyramid schemes into the market (see below), the pyramid schemes raised their interest rates again, to 8 percent per month.<sup>12</sup> The outcome of the elections was also crucial. The elections were widely seen as rigged, so that local government elections scheduled for October took on a greatly increased significance. In these circumstances, the government did not want to give people any unpleasant surprises, and the tendency to ignore the growth of the pyramid schemes and hope that the problem would never materialize was reinforced.

In early 1996, new pyramid schemes entered the scene, drawing in more depositors, ratcheting up interest rates, and further confusing the authorities. The informal deposit-taking market had previously been dominated by a few large companies (For a brief description of the most important Albanian pyramid schemes see Table 2 and Box 2, below.) The three largest companies of the time, VEFA, Gjallica, and Kamberi, all offered interest rates of 4–5 percent per month, increasing, as described above, to 6–10 percent in the first half of 1996; all of these had substantial real investments and activities. In 1996 these were joined by two new schemes, Xhafferi and Populi, and one already existing but increasingly active one, Sude, which offered higher interest rates (12–19 percent per month in May 1996) and had no real investments.<sup>13</sup> This had baleful effects. First, more depositors were drawn in. Although VEFA was the largest scheme in terms of liabilities, it only had about 85,000 depositors. Xhafferi and Populli

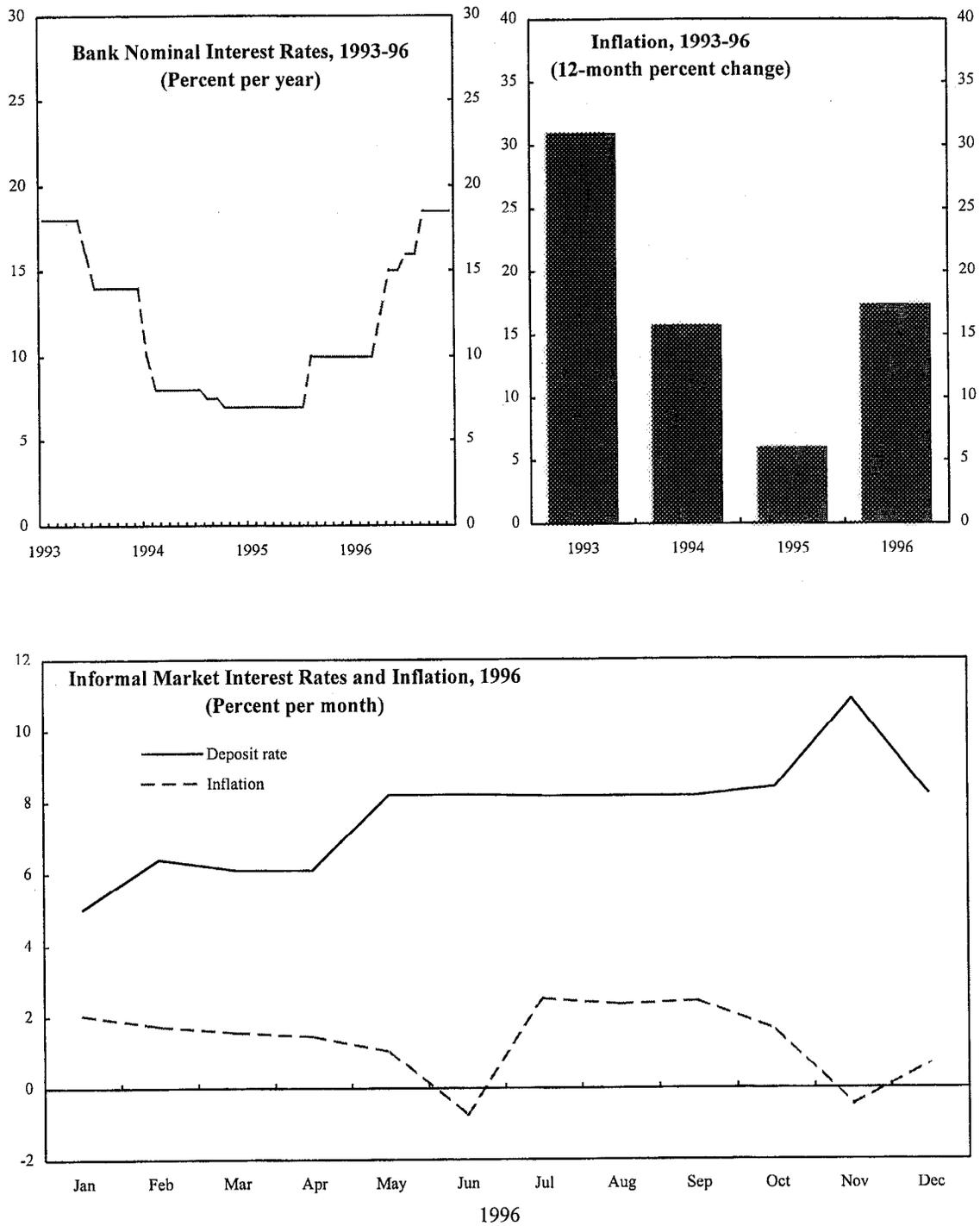
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<sup>11</sup> Much of the smuggled oil was legally imported into Albania, and hence subject to customs duties and excise taxes.

<sup>12</sup> Interest rates in the formal financial sector also rose during this period (Figure 1). Political uncertainty, and a pre-election loosening of fiscal policy, caused the lek to depreciate by some 15 percent during the first 5 months of the year, and underlying inflation rose from 10.6 percent to 19.1 percent per annum. In response, the Bank of Albania tightened monetary policy, raising minimum interest rates on 12-month deposits from 13.25 percent to 16 percent. However, the increase in annualized interest rates offered by the pyramid scheme companies (from about 100 percent to about 150 percent) cannot be explained by these changes.

<sup>13</sup> In Xhafferi’s case there was a smattering of window dressing. Xhafferi sponsored a football team in one of the most depressed towns in Albania and recruited the former captain of the 1978 World Cup winning Argentina team to coach it. The football ground was the scene of one of the first pyramid scheme riots.

Figure 1. Albania: Inflation and Interest Rates



Source: National authorities.

Table 2: A Summary of the Main Albanian Pyramid Schemes

Company	Date started collecting money	Monthly interest rate offered 1/	No. of creditors at time of collapse	Liabilities to creditors (million lek)	Estimated assets 2/	Liabilities to creditors in U.S. dollars at pre-crisis exchange rate 3/	
						Total owned (US\$ millions)	Average owed (US\$)
VEFA	1994	8	85,000	67,929	4,999	655	7,707
Gjallica	1993	10	82,000	51,467	495	496	6,053
Kamberi	1994	10	...	6,330	519	61	...
Silva	1994	10	15,000	3,332	871	32	2,142
Cenaj	1994	10	...	7,021	750	68	...
Xhafferi	1996	47	1,188,000	30,833	16,033	297	250
Populli	1996	39	304,000	6,310	3,786	61	200
Sude	1994	41	13,000	3,900	0	38	2,893
Totals			1,687,000	177,122	27,453	1,708	
Memorandum items:							
Depositors as percentage of population						51	
Liabilities of the schemes as a percentage of 1996 GDP						64	

Sources: Author's estimates, based on administrators' and auditors' reports and data collected by the Bank of Albania.

1/ Rates offered in November 1996. As noted in the text rates offered increased during 1996, reaching a peak in November.

2/ In the case of all schemes except Xhafferi and Populli, these figures are based on the administrators and auditors estimation of assets remaining in January 1998, a year after the collapse. In some cases, other assets were taken by the operators between the collapse of the schemes and its being taken over by administrators. Some assets were also destroyed during the civil disorder which followed the collapse. Xhafferi's and Populli's assets were all held in bank deposits, and was seized by the government in January 1997 and distributed to creditors. The administrators' January 1998 estimates of the values of physical assets (about US\$50 million at current exchange rate excluding Xhafferi and Populli) have proved to be significantly higher than what they have been able to realize so far (about US\$15 million) so that dividing liabilities by assets for each company overstates the amount that depositors are likely to receive.

3/ The exchange rate at December 1996 was 103.7 leks to US\$1. This is the most relevant exchange rate for assessing the significance of the schemes. This exchange rate at end-December 1998 was 150.6 leks to US\$1.

## Box 2. The Major Albanian Pyramid schemes

Altogether, 17 companies were put into administration by the authorities following the crisis of 1997. The following is a sketch of the most significant of them.

**VEFA** The largest and most important of the companies 1/, the auditors believe that VEFA took in at least \$700 million in deposits, and probably over US\$1 billion. When it was taken over, liabilities, excluding some US\$200 million in accrued interest, amounted to US\$250 million, while its assets were generously estimated at US\$30 million. VEFA was founded in October 1992 as a trading company, but soon started taking deposits, and by late 1996 was offering an interest rate of 8 percent per month. Its President, Vehbi Alimucaj, was by most accounts attempting to build a business empire, but took a fateful decision to do so by raising cash at insupportable rates. The company's assets included supermarkets, restaurants, a bitumen mine, a cruise ship, an entertainment complex and a TV station.

**Gjallica** A huge and massively fraudulent scheme, Gjallica was started in 1991 as a currency exchange, but afterwards began taking deposits. In total, US\$850 million in deposits were taken, though auditors estimate that over 80 percent of this came in during 1996, when Gjallica was offering interest rates of around 10 percent per month. Gjallica was something of an elite company, with about 170,000 investors at its peak, and an average investment of almost US\$5,000. At the time of its collapse, its liabilities were US\$343 million, its assets worth US\$3 million. The owners fled to Turkey, having, according to the auditors, withdrawn at least US\$17 million during the scheme's operation. Gjallica was based in Vlore, a large city in southern Albania known as a smuggling base. Its collapse triggered the first wave of violent civil disorder

**Populli** Started as a "charitable foundation", actually a pure pyramid scheme, in early 1996, and attracted over 400,000 investors. By the end, Populli was offering to pay two times principal invested after three months. Its liabilities at the time of collapse were over US\$150 million. Much of its money was held in the state banks, and was seized by the authorities. Depositors got back 60 percent of their investments.

**Xhafferi** Started by Rrapush Xhafferi as a spin off from Populli, Xhafferi quickly outstripped its rival. At the time of its collapse liabilities were over US\$300 million. About half of this was returned to depositors from seized bank deposits. Xhafferi went for a mass market, posing as a benefactor, sponsoring a football team, and attracting nearly *one and a half million* depositors, with an average investment of about US\$250. At the end, he offered "three times principal after three months".

**Sude** Maksude Kademi started by running a lottery in the shoe factory where she worked, but then began operating a pyramid scheme. By the end, she was offering to "double your money in two months". Sude was the first scheme to fold, in November 1996, with liabilities variously estimated at US\$40-90 million, and no assets. Considering that most of the deposits paid into Sude were made in the last two months of its operations, the disappearance of the assets is suspicious. Ms. Kademi is currently serving a sentence of 3 years and 4 months for conspiracy to defraud.

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1/ Most deposits in the pyramid schemes were made in Leke, though some were made in foreign currencies. In converting into dollars, for most of the schemes, an exchange rate of 150 leke to 1 US dollar is used, as this was the average exchange rate in 1998, when most of the companies were finally brought under effective control. However, for Xhafferi and Populli a rate of 105 leke to 1 US dollar is used, because this was the rate at the point when the Bank of Albania froze their deposits in January 1997.

between them attracted nearly *two million* depositors within a few months, in a country with a population of 3½ million. Second, it increased the pressure on the existing schemes to increase rates or compete in other ways. Finally, the existence of companies which were obviously pyramid schemes caused the authorities to draw a false distinction between them and the similar companies that had real investments, and to assume that the latter were solvent.

In the second half of 1996 mania took hold. In July, Kamberi raised its interest rate to 10 percent per month. In September, Populli began offering over 30 percent per month. In November, in a final spasm, Xhafferi offered to treble depositors' money in three months (monthly equivalent rate 44 percent) and Sude responded with an offer to double the principal in two months (41 percent monthly rate). By November, the face value of liabilities had reached US\$1.2 billion. Yet even these numbers fail to capture the lunacy that gripped Albania during this period. Queues formed to deposit funds with both the pure pyramid schemes and the longer established companies, and a massive number of new depositors poured in, especially to the high interest schemes. The crowd was composed not only of the poor and the gullible but of those who believed that the schemes had either government support or sources of funds derived from illegal activities which would sustain their returns, and of those who appeared to believe that "when the rest of the world are mad, we must imitate them in some measure".<sup>14</sup> People sold their houses and apartments to invest in the schemes; farmers sold their livestock. The mood is vividly captured by a resident who said that Tirana in the autumn of 1996 smelled and sounded like a slaughterhouse, as farmers drove their animals to market to put the proceeds in the pyramid schemes.

Through all of this, the government was a passive observer. Although the Governor of the Bank of Albania since the beginning of the year had sent monthly letters updating the government on the interest rates being offered by the schemes, and warning of their nature, it was not until October that the Minister of Finance, returning from the IMF and World Bank annual meetings in Washington, warned the public for the first time about the risks of the schemes. Even then, government statements often compounded the problem. In particular, a false distinction which the government drew between the companies with real investments and the "pure pyramid schemes" obscured the fundamental insolvency of all of the schemes.<sup>15</sup> When it was suggested that some of the companies might be surviving by laundering money

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<sup>14</sup> The phrase was used by a banker who invested in the South Sea Bubble (see Box 3), and is quoted in Kindleberger, "Manias, Panics and Crowds: A History of Financial Crises" (New York, Basic Books, 1978). The similarities between the pyramid scheme mania and other financial manias are discussed below.

<sup>15</sup> One of the more bizarre features of the year was that the operators of the schemes did not themselves have a consistent name for their activities, so that many, including those with real investments, simply adopted the name "pyramid schemes" given to them by foreign observers, but stripped it of its pejorative implications. This led to quotes like a government official's reported assertion that "Our pyramid schemes are the cleanest pyramid schemes in Europe".

### Box 3. Pyramid Schemes Old and New

Pyramid schemes have a long and inglorious history. The Albanian schemes deserve a small place in the rogues' gallery for their size relative to the Albanian economy and for the dramatic consequences of their collapse. But for historical significance, they do not compare with one of the earliest pyramid schemes, the South Sea Company, and for notoriety they must defer to the operations of Charles Ponzi, whose name became synonymous with the phenomenon.

#### The South Sea Bubble

The South Sea Bubble began in London in 1710 as a scheme to redeem British government debt. The government granted the South Sea Company trading privileges, and in return holders of government paper which had not been guaranteed by parliament and which was trading at a discount were offered the opportunity to exchange it for shares in the company. The government committed itself to pay the company interest on this debt, but at a low rate. The difference was supposed to come from the Company's trading profits. In fact, after a brief and unsuccessful excursion into the slave trade, the only thing that the company traded was its own stock, constantly pumping up the price of the stock by lending shareholders money to enable them to buy new stock on the security of their existing stock. (The money was borrowed from a client bank and from the government.) Investors included the cream of the English aristocracy, including the king. So long as the price kept rising everyone was content. But when people started selling, the price fell, the company was unable to pay its dividend, and bankruptcy quickly followed. And in fact the bubble was very short lived. The company lasted over 10 years, but active trading lasted less than a year. The South Sea Bill received royal assent on April 7, 1720. By June, rivals were proliferating, so that Parliament tried to protect the company by enacting the Bubble Act, authorizing prosecution of unauthorized joint stock companies. This rebounded on the South Sea Company, because many who had made speculative bargains in the companies that were being attacked could not meet their commitments without selling South Sea stock. By December 1720, the company was bankrupt, and its government sponsors, many of whom had been bribed with discounted stock in the rising market, were out of office and disgraced. Parliament voted to seize the assets of those involved, including corrupt politicians. However, even with the full force of law behind the planned seizure and liquidation, it took trustees appointed by parliament over 7 years to realize some 2 million pounds in such seizures. The government also had to take back its debt and pay off the holders, though the exchange did not help those who had speculated.

#### The Ponzi Scheme

Charles Ponzi's scheme was also short lived. He issued his first notes for US\$800 in Boston in December 1919. By the summer of 1920 he was a millionaire. On November 1, 1920 he plead guilty to mail fraud. Ponzi claimed to be investing in "international reply coupons", which immigrants to the US could send to relatives to pay postage on international mail, and which, because of currency movements during the First World War, traded at widely varying values in different countries. In principle, there were opportunities for arbitrage, except that the coupons could not be traded for cash legally, there were not enough of them, and Ponzi never bought them anyway, except a few for window dressing.

#### Contemporary Pyramid Schemes

One common feature of the South Sea Bubble and the Ponzi scheme was that their investors believed that their profits were derived either from special privileges conferred by the government (South Sea) or by a loophole arising from undervalued government backed instruments (Ponzi). To some extent this was also the appeal of a contemporary scheme, MMM, which rose and fell in Russia in 1994, and which purported to be investing in privatization bonds. Others have traded on local political links, notably Caritas, the notorious Romanian pyramid scheme which was a pure pyramid but which enjoyed the support of the local mayor who was also the leader of one of the parties in the governing coalition. Indeed, it is one of the ironies of pyramid schemes, which seem at first sight to be a manifestation of the rawest form of unregulated market capitalism, that most rely on a purported association with governments. Sometimes operations which attempt innovative financial transactions rely on wholly imaginary links: one can, for example, invest in bulk purchases of international lottery tickets through a company calling itself International Monetary Funding—no relation.

for the Italian mafia, the President himself came to their defense, arguing that these were legitimate and successful Albanian companies. In November, again responding to outside pressure, the government set up a committee of academics to investigate the schemes, with the main focus still being on the pure pyramid schemes. The committee never met.

The IMF and World Bank did give increasingly strident warnings about the schemes in the course of 1996, but these warnings were not heeded, and may have been too late to do much good in any case. Both institutions had expressed concern as far back as December 1994 about the dangers of criminal enterprises operating in the informal market, though the concern was as much about money laundering as about pyramid schemes. However, it was not until August 1996 that a strong warning was given. It was in that month that the Bank of Albania communicated its concerns to an IMF mission visiting Tirana. Concern was also triggered by the mission's first look at the June and July monetary data, which, as discussed below, contained the first intimations of the effects of the pyramid scheme phenomenon on the banking system. The mission left a letter with the President warning him about the schemes and urging early action. In September, a World Bank mission repeated these warnings even more vigorously. However, even then, nobody had any idea of the size of the schemes. It was only in October, when the Bank of Albania found out that VEFA's deposits in the banking system were equivalent to US\$120 million (5 percent of GDP), that the enormity of the problem became clear. In October in Washington, the IMF and World Bank repeated their warnings, finally producing a public warning from the Minister of Finance. Press and public reaction was mostly negative: the IMF was accused of trying to close down Albania's most successful firms. The president of VEFA, a former organizer of street cleaners, commented that the IMF was not fit to clean the streets of Tirana. Finally, in a November 19 press conference, another visiting IMF mission warned the public about the schemes and urged the government to investigate all of them. On the same day, Sude defaulted on its payments, and the collapse began.

#### **IV. THE CRISIS OF 1997**

##### **A. Collapse**

It took four months for the remaining pyramid schemes to collapse, bringing down with them the Democratic Party government, and plunging Albania into anarchy. The collapse of Sude shook confidence in all of the borrowing companies. People began to listen to the warnings, and the flow of new deposits ceased. In an unusual attempt to convince depositors of their soundness, the owners of VEFA, Kamberi, Silva and Cenaj agreed to reduce interest rates to 5 percent per month. The tactic did not succeed. In January 1997, both Sude and Gjallica, one of the funds with real investments, declared their bankruptcy, triggering riots, especially in the southern city of Vlore, where Gjallica was based. As the riots intensified and spread, the remaining schemes ceased payments.

The government initially tried to limit the damage caused by the pyramid schemes, and belatedly took some important measures, but still failed to control the largest companies. Most importantly,

throughout the violence, the government stuck firmly to the principle that depositors would not be compensated for their losses from the budget. This crucial and courageous decision, which was endorsed by the opposition, made economic stabilization after the crisis much easier. The government also finally began to move against some of the companies. On January 26, 1997, it froze the bank accounts of Xhafferi and Populli, which contained an astonishing US\$250 million (10 percent of GDP). The Bank of Albania, acting on its own initiative, began to limit daily withdrawals from bank accounts to 30 million leks (then about US\$300,000) to prevent other schemes from emptying their accounts. These measures helped: the seized assets of Xhafferi and Populli amounted to about half their liabilities, and this money was returned to depositors over the ensuing months. In February, parliament passed a law banning pyramid schemes (but not defining them). However, the government was still trying to maintain the distinction between the companies with real investments and the "pure pyramid schemes", and it still did not move against the largest schemes. VEFA, for example, was allowed to continue advertizing on television during the worst of the violence.

The measures taken by the government proved to be too little, too late. By early March 1997, Albania was in chaos. The government had lost control of the more prosperous south of the country, where investments in the schemes had been highest. The army and police had mostly deserted. Armories had been looted, in the south by rioters, in the north by the President's supporters; evacuation of foreign nationals and mass emigration of Albanians to Italy began. The government's authority, shaky since the May 1996 elections, had evaporated. When Tirana fell into civil disorder in late March, the government resigned, the President agreed to hold new parliamentary elections by the end of June and an all-party interim coalition government led by members of the former opposition Socialist Party was appointed.

### **B. The Recovery Program**

The interim government inherited a desperate situation. Some 2,000 people were killed in the violence that followed the pyramid schemes' collapse. Almost one million weapons were looted. In April, large parts of the country were still outside of the government's control. Government revenue collapsed, as customs posts and tax offices were burned. By end-June the lek had depreciated against the dollar by 40 percent; inflation during the first half of the year was 28 percent. Many industries had temporarily ceased production, and trade was interrupted. Meanwhile, the major pyramid schemes continued to hang on to their assets, to proclaim their solvency, and to resist closure. Moreover, the political authority of the government was doubtful. Parliament continued to be dominated by the Democratic Party, and President Berisha continued to block action against the remaining pyramid scheme companies. Only in July, when new parliamentary elections gave it a decisive majority and President Berisha resigned, did a new government, a five-party coalition headed by Socialist Party leader Fatos Nano, have a free hand in dealing with the crisis.

Despite its handicaps, the interim government had made strong efforts to restore order and to stabilize the economy, drawing on the assistance of the international community. In April the new government invited a multinational force led by Italy to restore order, and the situation in the

capital and northern cities stabilized. In May, the government took steps to restore tax collection, with assistance from the EU, IMF and World Bank. The newly elected government, with a largely unchanged economic team, continued this progress. By early September, the government had agreed with the IMF on an economic program supported by emergency assistance. Major elements included an increase in the VAT rate from 12½ to 20 percent, strict monetary control, and a resumption of structural reform, including long-overdue reforms in the banking sector. The program quickly bore fruit: output and trade began to pick up again; by end-December 1997 the lek had appreciated by 20 percent; inflation during the second half of the year fell to 11 percent; and the budget deficit was brought under control for the first time since 1995.

### C. Winding Up the Pyramid Schemes

Dealing with the remaining pyramid schemes proved more difficult. The consensus that depositors would not be compensated for their losses from the budget held, but on other aspects of the problem divided political authority slowed progress throughout the period of the interim government. The new Minister of Finance, encouraged by donors and international financial institutions, quickly decided that to give depositors confidence that the pyramid schemes would be wound up in an honest and transparent way foreign administrators should be appointed to liquidate them. However, given the inadequate legal framework, this required new legislation.<sup>16</sup> This proved very difficult to enact. Several of the largest companies were still controlled by their operators, and there was great reluctance, especially by members of the outgoing parliament, many of whom were reported to have invested in the schemes, to move firmly against them. Nevertheless, recognizing that something would have to at least seem to be done, parliament enacted in May 1997 a law providing for the auditing of the schemes by “a group of financial experts” to be appointed by the Council of Ministers. The law was vague in most respects, but specific in ordering the new Minister of Finance, who was from the former opposition party, to report to parliament on the outcome of the audit within three weeks.

#### (i) A New Law Allowing the Appointment of Administrators

With parliament now having dissolved for elections to be held on June 29, the interim government was left with an unworkable law and the companies still being controlled (and gradually drained) by their operators. In response, the government proposed action by presidential decree, and sought the advice of the IMF and World Bank. Meeting in Rome on June 9–10, 1997, representatives of the government, the president, the IMF and the World

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<sup>16</sup> It would have been possible in theory to use the existing bankruptcy law to take over the pyramid scheme companies. However, this would have meant that administrators would be appointed by the courts, which were notoriously corrupt (a survey funded by the World Bank in 1998 found that the judiciary was regarded as the second most corrupt institution in Albania, after the customs service) and open to influence by the pyramid scheme owners.

Bank drafted a new decree. Although President Berisha rejected the decree, it was approved as a law by the newly elected parliament in July 1997, and signed by Berisha's successor, President Mejdani.

The main elements of the new law were that:

- All pyramid schemes were to be made subject to control by administrators;
- The administrators should be "a company qualified and reliable in the field", which in practice meant that they should come from a major international accounting firm with experience in insolvency work; there should also be auditors from international accounting companies;
- The administrators were required to report regularly to the government, but were otherwise to be completely independent in their work
- The administrators were given very wide powers, including the power to carry on the companies' businesses, pay their debts, sell their assets, and decide whether to retain staff or managers; the power to seize the assets of named individuals connected with the schemes; and discretion to hire experts and trace assets abroad;
- There were criminal penalties for failure to cooperate with the administrators;
- The administrators were given the explicit power to stop the schemes from taking further deposits or engage in new borrowing.

(ii) Problems of Administration

The costs of hiring foreign administrators were borne by the government, but they drew on grants and concessional loans from donors and the World Bank in doing so. The continued involvement of the World Bank and the IMF also provided opportunities for the donors to monitor the administrators' proposals and work. This proved useful, since the problems facing the administrators were considerable. The new law had been drafted (as a decree) in June, but because President Berisha refused to sign the decree there was a delay of a month until the newly elected parliament passed the law. There was a further delay while foreign administrators were appointed, and even after this the pyramid scheme owners did not give up, resisting by both legal means (challenging the legislation in the courts) and less savory ones (threats of violence against the administrators).<sup>17</sup> As a result, the administrators were only able to take up their duties in November 1997, by which time the operators had significantly reduced the liquid assets of the schemes. Moreover, it took some further months to dislodge the operators completely, partly because the administrators needed the cooperation of at least some of them in finding the assets of the companies, partly because the

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<sup>17</sup> The government's lack of confidence in the courts turned out to be well-justified. In November 1997, the Constitutional Court, whose members had all been appointed by the previous administration, declared the law under which foreign administrators were appointed an unconstitutional infringement of private property rights. Parliament responded by passing the law again as a constitutional amendment.

employees of the companies (including a virtual private army of security guards in one) remained loyal to the operators, not the administrators. Only in March 1998 was control of all of the companies finally established. The owners who had not fled were jailed, and the administrators began the difficult task of preparing the remaining assets for sale.

There were also clashes between the government and the foreign administrators, in part reflecting differences of view about how firm to be with the operators (the government generally taking the tougher line) and in part because of a culture clash between the two. Foreign administrators used to reliable law enforcement were frustrated by uncooperative courts and banks and felt vulnerable to physical intimidation of their employees by the pyramid scheme operators in a still precarious security environment. For their part, underpaid and overworked government officials, some of whom had themselves shown great personal courage in taking on the pyramid scheme operators, thought the administrators were too slow in tackling their work, and unresponsive to the government's needs and constraints. The intercession of the World Bank and the IMF was on more than one occasion necessary to keep the two sides working together toward the same goal.

Finally, while the foreign administrators and auditors have done an excellent job in rendering the operations of the schemes transparent, the process of asset recovery has been disappointing. The losses during the period when the operators retained control of the schemes, the difficulty in establishing clear title to some of the schemes' assets, and the further difficulty in selling those assets, especially businesses, in a depressed economy with continuing security problems, have resulted in very limited asset recoveries so far. Indeed, the most successful exercise in asset recovery was the government's own seizure of the financial assets of two pyramid schemes in January 1997. Taking control of and disposing of real assets has proved much more difficult.

## V. THE ECONOMIC EFFECTS OF THE PYRAMID SCHEME PHENOMENON

The Albanian pyramid schemes were highly unusual, in that they were of a magnitude sufficient to have effects on the whole economy. Nevertheless, considering that the face value of their liabilities was so large—about half of 1996 GDP—the direct effects of their rise and fall appear to have been limited. They are also extremely difficult to identify, in part because of the limitations of data on the real economy in Albania, and in part because their collapse had profound political and social effects, in particular the outbreak of civil disorder, which themselves had a powerful effect on the economy.<sup>18</sup>

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<sup>18</sup> There are no national accounts data collected in Albania. GDP estimates are based on firm data on agricultural production and the production of state enterprises and very partial data on the growing private industrial and service sector. Moreover, the government's figures for the election year of 1996 were particularly suspect, and collection of some data for 1997 was interrupted by the civil disorder.

Outbreaks of pyramid schemes on the Albanian scale have fortunately been sufficiently rare that little or no work has been done on predicting their macroeconomic effects. Perhaps the closest analogy is other kinds of bubbles: in the stock market or in specific assets. In these cases, one would expect the main effects on the macroeconomic indicators to be through changes in perceived wealth. As the bubble (or the pyramid scheme) expands, people believe themselves to be better off than they actually are. Their demand for goods and for money therefore increases, and in the external accounts the current account can be expected to deteriorate. The increased demand for goods should produce some increase in either output, or inflation, or both. Also, to the extent that the bubble or scheme attracts money from outside the country there would be an expansion of the money supply, and capital inflows which may be sufficient to fund the deterioration of the current account deficit. After the bubble bursts or the scheme collapses, perceived wealth falls dramatically (and actual wealth may also have fallen, if it has been spent on consumption goods or if the scheme's operators have succeeded in stealing the money and taking it abroad). Therefore, one would expect demand for goods and money to fall, output and/or inflation to fall somewhat, and the current account to improve.

Some of these effects can be observed in Albania, but others were not, and to the extent that they can be identified during the period of the bubble, the effects directly attributable to the schemes appear to have been limited and short lived. The picture is confused by a significant loosening of the fiscal stance in 1996, which contributed to rising inflation. Inflation rose sharply in 1996, from about 6 percent during 1995 to about 17 percent, and the current account of the balance of payments excluding official transfers deteriorated by about 2 percent of GDP, to 9.1 percent of GDP (Table 1). The deterioration was fueled by a 35 percent increase in imports and dampened by a significant increase in private transfers, some of which were paid into the pyramid schemes. The effects of the pyramid scheme phenomenon show up most clearly in the import figures, which show a consumption boom (albeit a short lived one) late in 1996. The boom may have had some effect on inflation, but probably not a substantial one: the expansion of broad money resulting from an increased budget deficit (the result of a pre-election wage increase and a fall off in revenue collection) was significantly greater than inflation during the year, implying a fall in velocity of circulation. The effects on of the pyramid schemes on output are also unclear. During 1996, the peak year for pyramid scheme activity, output grew by about 9 percent. This was a similar growth rate to each of the previous three years, but the schemes may have helped sustain a growth rate that would have otherwise fallen. Output figures in Albania are in any case highly unreliable, and anecdotal evidence points to the schemes having had mixed effects. For example, employers reported difficulty in attracting workers during late 1996, as many people preferred to live off the interest from the pyramid schemes. On the other hand, the slaughter of livestock by farmers eager to invest in the schemes had the effect of increasing agricultural output in 1996 (while depressing it in future years as the capital stock diminished). The schemes' own investments appear to have added little to output, as they were mostly window dressing.

The growth of the pyramid schemes did produce major changes in the monetary indicators, especially in the second half of the 1996, but there was little impact on the banks or on the

broader economy arising from these changes. Table 3 reveals a number of striking changes in the monetary indicators, but also some interesting continuities. Beginning in June 1996, there was a rapid expansion of broad money fueled entirely by an increase in deposits. Moreover, almost all of this increase came from lek deposits of private sector companies (a sevenfold increase between May and December 1996) and foreign currency deposits of private sector companies (a threefold increase over the same period), giving a total increase in private sector deposits of 37.3 billion leks, or over 50 percent in seven months. Almost all of the new deposits were made by the pyramid scheme companies themselves. Thus, in the period to end-September, VEFA's deposits rose to some 15 billion leks (about US\$150 million at current exchange rates). By the end of the year VEFA had run down its deposits somewhat, but there were massive new deposits from Xhafferi and Populli, amounting to 27 billion leks (US\$258 million at end-1996 exchange rates). This behavior produced a major shift in the currency deposit ratio, a fall from 68 percent in June 1996 to 43 percent in November. However, it is revealing that deposits from other groups changed very little. There was a fall of about 4 billion leks (a little over 12 percent) in foreign currency time deposits of households in the last three months of the year, presumably reflecting withdrawals of deposits to invest in the schemes, but this accounts for only about 10 percent of the increase in deposits of private sector companies. The implication is that almost all of the deposits in the pyramid schemes came either from abroad (from Albanian emigrants or migrant workers) or from foreign currency cash held by residents.

It may seem remarkable that the pyramid scheme companies should have deposited their funds in state banks which were paying only a fraction of what the companies had to pay depositors, and where they were vulnerable to seizure by the government. The decision to do so appears to have been in part caused by the absence of alternatives in the short-term, and in part a reflection of the companies' confidence that the government would not interfere with them. Indeed, except in the cases of Xhafferi and Populli, two of the least politically connected schemes, this confidence turned out to be largely justified.

Finally, it should be noted that while the increase in total deposits was very large, the banks and the economy were largely insulated from the effects of the increase. The increase in deposits did not fuel further monetary expansion through the money multiplier, because most of the deposits were in state-owned commercial banks, whose lending was subject to strict limits. The banks therefore initially accumulated excess reserves, and then, with the agreement of the Bank of Albania, invested almost all of the new deposits in treasury bills, some purchased from the government, some bought from the Bank of Albania in the secondary market. Thus, the government was able to finance its deficit courtesy of the pyramid schemes, but there was virtually no increase in private sector credit arising from the increase in deposits.

The effects on the economy in 1997 of the pyramid scheme collapse are even more difficult to calculate, because the collapse triggered widespread civil disorder. Output is estimated to have fallen by 7 percent in 1997, with a larger fall having occurred in the first half of the year and some recovery in output thereafter. However, it is impossible to separate out the supply side effects of the civil disorder from the demand-side effects from the loss of savings in the

Table 3. Developments in Broad Money and the Structure of Bank Deposits, 1996

(End-period stocks, in billions of leks)

	Dec-95	Jan-96	Feb-96	Mar-96	Apr-96	May-96	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96
<b>Broad Money</b>	107,450	110,427	112,296	112,928	116,564	118,421	122,767	127,947	132,167	135,471	143,626	144,385	154,552
Currency	41,906	42,265	42,891	44,665	45,854	48,339	49,788	49,878	51,459	51,394	48,230	43,375	47,815
Deposits	65,543	68,162	69,405	68,263	70,711	70,082	72,979	78,070	80,707	84,077	95,396	101,010	106,737
Demand deposits	28,939	29,300	29,298	27,706	29,397	28,286	31,367	37,091	36,417	39,797	52,948	58,670	63,624
in leks	17,346	16,978	16,950	15,859	16,133	15,085	18,088	21,891	19,211	20,878	28,908	37,629	42,590
State enterprises	10,909	10,818	10,883	10,511	10,201	9,632	10,076	10,512	10,133	9,889	9,552	8,893	9,103
Joint ventures	162	174	169	153	174	176	178	184	195	152	172	131	227
Private sector	4,970	4,552	4,419	3,701	4,186	3,602	6,227	9,399	6,479	7,656	15,817	26,152	31,082
Households	1,305	1,435	1,479	1,494	1,571	1,675	1,608	1,795	2,404	3,180	3,367	2,452	2,179
in foreign currency	11,593	12,321	12,347	11,846	13,264	13,201	13,279	15,200	17,206	18,919	24,040	21,041	21,033
State enterprises													
Joint ventures	524	440	434	468	549	485	496	427	543	533	627	470	455
Private sector	2,820	3,057	2,955	2,601	3,344	2,995	3,201	5,781	7,874	9,157	14,438	13,830	13,021
Households	1,705	2,013	2,184	2,262	2,291	2,188	2,191	1,720	1,834	1,785	1,936	1,926	2,341
Time deposits	36,604	38,863	40,107	40,557	41,314	41,796	41,612	40,979	44,290	44,280	42,449	42,341	43,114
in leks	28,117	29,563	30,604	30,950	31,438	31,892	31,740	31,150	34,761	34,823	34,058	32,816	30,240
State enterprises													
Joint ventures	0	0	0	0	0	0	0	0	0	0	0	0	0
Private sector	459	813	598	598	603	604	598	595	3,175	3,773	4,369	4,005	2,966
Households	27,659	28,750	30,007	30,352	30,835	31,288	31,142	30,555	31,586	31,050	29,687	28,811	27,275
in foreign currency	8,487	9,300	9,503	9,607	9,876	9,904	9,872	9,829	9,529	9,457	8,393	9,525	12,873
State enterprises													
Joint ventures	69	69	69	54	53	54	55	54	54	55	54	54	57
Private sector	969	1,434	1,150	1,154	1,155	1,087	1,100	1,115	1,093	1,191	162	1,107	3,321
Households	5,733	6,054	6,534	6,642	6,916	7,007	6,951	6,888	6,738	6,579	6,540	6,722	7,810
<b>Memorandum items</b>													
Currency/Deposit ratio	63.9	62.0	61.8	65.4	64.8	69.0	68.2	63.9	63.8	61.1	50.6	42.9	44.8
Lek deposit/total deposit ratio	69.4	68.3	68.5	68.6	67.3	67.0	68.3	67.9	66.9	66.2	66.0	69.7	68.2

Source: Bank of Albania

pyramid schemes. Similarly, the increase in inflation to over 40 percent in 1997 can be attributed almost entirely to the depreciation in the exchange rate and to the sharp rise in the fiscal deficit caused by the collapse of revenue during the civil disorder. Recorded imports fell by over 25 percent, an unwinding of the import boom of the year before, but also a reflection of disruptions in trade and almost certainly increased smuggling during the crisis. Capital inflows declined, but did not turn into net outflows (non-resident depositors in the pyramid schemes could not, after all, get their money out). Actually, it is striking how limited an effect on economic variables even the combined effect of a major loss of private savings (through the pyramid scheme collapse) and a major disruption of production (due to the civil disorder) appear to have had in 1997.

In 1997 as in the previous year, there were dramatic changes in the monetary indicators, which had only a limited impact on the banks or on the economy. As shown in Table 4, there was a massive fall in private sector deposits in the course of 1997. This reflects in part the seizure and gradual distribution of the financial assets of Xhafferi and Populli, and in part a gradual rundown of assets of other schemes by their owners prior to the taking over of those companies by administrators.<sup>19</sup> The extent to which these assets were used to pay off favored depositors or cover running costs, or simply appropriated by the operators, is still subject to investigation.<sup>20</sup> In the period through July 1997 refunded depositors seem to have mostly held cash, as reflected by a near doubling of the currency deposit ratio. However, later in the year this trend was reversed, as individuals increased time deposits held in lek. This phenomenon can be attributed partly to the high real interest rates being offered by the banks at this time: during the second half of 1997 prices only rose by 11 percent, (annualized rate 23 percent) while the (annualized) interest rate on three month deposits was well over 30 percent for most of this period. It also seemed to reflect some increased confidence in the banks. Through all of these gyrations, the banks' liquidity position remained adequate and private sector credit increased only modestly. The effects of the changes in the currency deposit ratio were mostly absorbed by Bank of Albania purchases and then sales of treasury bills, and the real economy remained unaffected.

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<sup>19</sup> The anomalous figures for January 1997 in Table 4 reflect a temporary accounting treatment of the asset seizure, and should be ignored.

<sup>20</sup> There were certainly some cases of outright theft, and many more of fraud, especially withdrawals of funds to purchase assets at vastly inflated prices from related parties. It is not clear to what extent these could have been prevented if the authorities had seized the financial assets of the other companies at the same time as Xhafferi and Populli. However, it appears that the limit on daily withdrawals was not an effective barrier. It was set at a relatively high level (30 million lek, or about US\$300,000 at the time the limit was imposed) and was applied to individual *bank accounts* rather than *companies*. Many companies had numerous bank accounts: VEFA, for example, had over 80 accounts.

Table 4. Developments in Broad Money and the Structure of Bank Deposits, 1997

(End-period stocks, in billions of leks)

	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	Oct-97	Nov-97	Dec-97
<b>Broad Money</b>	154552	151968	154251	157031	161205	168071	173968	173317	180170	185330	188190	190310	198547
<b>Currency</b>	47815	48212	51947	56543	63450	69542	75746	77635	77449	74166	70379	67675	72726
<b>Deposits</b>	106,737	103,756	102,305	100,488	97,755	98,529	98,222	95,682	102,721	111,163	117,810	122,635	125,666
<b>Demand deposits</b>	63,623	43,399	56,422	53,983	49,325	48,358	44,828	39,575	37,768	38,053	37,685	36,744	37,282
<b>in leks</b>	42,591	25,233	38,321	35,315	32,263	28,414	25,782	23,352	21,446	19,823	19,429	18,953	18,946
State enterprises	9,103	8,423	8,892	7,831	8,856	8,877	8,563	8,435	8,642	8,577	9,796	9,880	9,892
Joint ventures	227	143	133	132	140	118	122	132	124	142	138	145	131
Private sector	31,082	14,175	28,530	26,547	22,409	18,669	16,272	13,752	11,863	10,334	8,769	8,238	8,294
Households	2,179	2,493	766	805	857	749	826	1,033	817	770	726	689	627
<b>in foreign currency</b>	21,033	18,166	18,101	18,668	17,061	19,945	19,046	16,223	16,321	18,229	18,256	17,791	18,336
State enterprises													
Joint ventures	455	712	645	594	526	586	473	434	429	506	482	539	610
Private sector	13,021	8,671	8,649	9,592	8,270	10,156	9,256	7,405	7,209	7,497	7,784	7,457	7,876
Households	2,341	2,764	3,027	2,694	2,523	3,203	3,177	2,728	2,917	2,731	2,702	2,651	2,699
<b>Time deposits</b>	43,114	60,357	45,882	46,505	48,430	50,171	53,393	56,107	64,953	73,110	80,125	85,891	88,384
<b>in leks</b>	30,240	43,334	29,403	39,818	31,895	33,012	35,819	42,025	49,383	56,380	63,356	69,021	70,549
State enterprises													
Joint ventures	0	0	0	0	0	0	0	0	0	0	0	0	0
Private sector	2,966	15,808	981	1,227	1,387	207	81	43	65	71	75	74	74
Households	27,275	27,522	28,422	28,591	30,508	32,804	35,738	41,982	49,318	56,309	63,281	68,947	70,475
<b>in foreign currency</b>	12,873	17,023	16,479	16,687	16,535	17,159	17,574	14,082	15,570	16,731	16,769	16,870	17,835
State enterprises													
Joint ventures	57	51	59	59	53	53	56	63	64	86	184	182	261
Private sector	3,321	5,403	3,578	3,503	3,465	1,779	1,789	298	190	386	503	549	1,705
Households	7,810	10,657	11,462	11,639	11,616	13,837	14,204	12,303	13,860	14,380	14,240	14,282	13,975
<b>Memorandum items</b>													
<b>Currency/Deposit ratio</b>	44.8	46.5	50.8	56.3	64.9	70.6	77.1	81.1	75.4	66.7	59.7	55.2	57.8
<b>Lek deposit/total deposit ratio</b>	68.2	66.1	66.2	64.8	65.6	62.3	62.7	68.3	69.0	68.6	70.3	71.7	71.1

Source: Bank of Albania

The long-term effects of the pyramid scheme phenomenon are still unclear, but on the evidence so far they too will be limited. Output in 1998 is estimated to have increased by about 8 percent, with an increase in agricultural output due to a good harvest offsetting disappointing investment. Investors have been discouraged by domestic and external security concerns (high crime and political instability, and heightened tension in neighboring Kosovo). Inflation and the budget deficit both fell sharply in 1998. Structural reform of the banking sector is underway. One of the three state-owned banks has been closed, and another is in the process of privatization. A new Bank of Albania Law and Banking Law, both drafted with IMF assistance, were approved, giving the Bank of Albania specific powers to prevent the occurrence of banking business by non-licensed financial institutions. The sale by the administrators of the remaining assets of the pyramid scheme companies began in mid-1998, and sales continue in 1999. The government intends to distribute the proceeds of the sales to depositors in the course of 1999. The operators of the schemes are either in jail or out of the country.

The apparently limited effects may be an indication of the remarkable resilience of the Albanian economy, but the government's avoiding a bailout of pyramid scheme depositors and its subsequent adjustment efforts have also been important. Albania has since the beginning of transition had extremely flexible prices and wages, and the government's being able to cut real public sector wages substantially in 1997 (by leaving nominal wages unchanged), and the economy being able to absorb a substantial nominal and real appreciation of the exchange rate from the heavily depreciated levels of mid-1997 without apparent competitiveness problems allowed the authorities to reduce inflation quickly after the inflationary burst in early 1997, and to prevent inflationary expectations from becoming entrenched. The new government's willingness to tackle the budget deficit and to embark on long-overdue structural measures has also been crucial. Finally, the political consensus that there should be no bailout of depositors from the budget has prevented major fiscal costs and also moral hazard problems. It appears that no new pyramid schemes have emerged in Albania since the crisis, something that might appear unsurprising but has not always been the case in other transition economies where large pyramid schemes have flourished. To a large extent, this must be due to the political and public consensus that the burden of the losses should be borne by depositors, not taxpayers.

The Albanian experience does also suggest though that the macroeconomic effects of even very large pyramid schemes are likely to be quite limited. At the very least, the events of 1996 and 1997 produced dramatic shifts in the perceived wealth of individuals in the economy, but the effect of these shifts on demand is not at all clear. The strongest data is on imports, which did increase in 1996 and fall back in 1997. On the monetary side the rise of the pyramid schemes certainly did not produce an increase in velocity and prices, which might have been expected from the increase in perceived wealth. Elsewhere, the poor quality of the data calls for caution in drawing conclusions, but there does not appear to have been an increase in prices of other assets—for example property—with the exception of the few properties that the pyramid scheme companies actually bought themselves at inflated prices. Possibly the main effects were on asset distribution. A few thousand people got richer, some of them much

richer; many more got poorer, some of them much poorer, but on aggregate the real wealth loss to the economy was very limited.

## **VI. LESSONS FOR THE FUTURE**

### **A. Preventing Pyramid Schemes**

The pyramid schemes were not a product of circumstances unique to Albania. It is tempting to ascribe the kind of mania which gripped Albania in 1996 to peculiar Albanian circumstances, to believe that it could not have happened in a more developed economy. The isolation of Albania until recently and the population's unfamiliarity with market institutions seem to reinforce this argument. But it does not hold water. Pyramid schemes have been especially prevalent in transition economies in recent years (MMM in Russia, Caritas in Romania, and smaller schemes in Bulgaria and the Czech Republic have come to light) but they also exist in industrial countries. If they rarely come to public attention in these countries it is probably because there are more people prepared to point out the difference between a credible and an incredible rate of return, and because better law enforcement prevents them from reaching a newsworthy size. And some of the other conditions which led to the rise of the pyramid schemes—an inadequate banking system, an unclear legal system, poor governance—are all too common in other parts of the world. It has also been suggested that the Albanian population, poor and conscious of the wealth of neighboring countries like Italy, were more than usually susceptible to the promises of the pyramid scheme operators. Again, there may be a little truth in this, but it is worth remembering that most of the British aristocracy, including the then Master of the Royal Mint, Sir Isaac Newton, fell for the South Sea Bubble, and that in 1917, just before Ponzi started his operations, Theodore Roosevelt said that "The thing that will destroy America ... [is] the Get Rich Quick theory of life."

There are steps that governments can take to make the growth of pyramid schemes less likely. The poor performance of the formal banks in Albania, and the failure of the government to tackle this issue in the years since transition began, played a major role in getting the schemes started, and in concealing their damaging nature. Ambiguities in the legal framework and the absence of a clear line of responsibility for dealing with the problem delayed the necessary response in 1996 and hampered the takeover and liquidation of the companies in 1997. Finally, poor governance lay at the heart of the pyramid scheme phenomenon. There were corrupt relationships between the companies' operators and the highest levels of the Albanian government, and these relationships both prevented government agencies from taking action against the companies and disguised from investors how insecure the companies were. There are plenty of other reasons for governments to tackle bank reform, to enact good legislation and to improve governance. But the Albanian experience is a salutary reminder of what can happen when all of these things slip.

Authorities should supervise closely both formal and informal financial markets. Supervision of the informal credit market in Albania was nonexistent, and since the pyramid schemes were for some time viewed as part of that market they too went unsupervised. The Bank of Albania

did began to take notice at the end of 1995, at about the time the most rapid growth of the schemes began. But again there was no institution which had clear authority to intervene. Even when the effects of the pyramid schemes began to show up in the monetary statistics, the scale of their activities was not clear to the authorities. Here the lapse was in supervision of the formal banking system. By September 1996, VEFA's deposits accounted for over one third of all demand deposits. Such a rise in the banks' liabilities to a single customer should not have gone unnoticed. Moreover, given the rapid growth of the schemes, and the delays in obtaining data, it is not enough to rely on aggregate monetary data to sound the alarm bell about extraordinary developments in the economy.

The international financial institutions too can draw lessons from the pyramid scheme phenomenon, though their capacity to influence events is limited. It is arguable that the IMF and World Bank should have seen the problem in Albania coming earlier, and warned the authorities more sternly. However, it is not the job of the IMF and World Bank to supervise the activities of individual companies, especially when they are suspected of having criminal links. As for warnings, the IMF and World Bank were consistent in their warnings as soon as the problem became apparent, despite the scepticism of the authorities. But the effectiveness of these warnings was hampered by the absence of conditionality: disbursements from both the IMF and World Bank were already suspended because of macroeconomic slippages. Moreover, it is difficult, and could be reckless, for international institutions to say publicly that financial institutions are insolvent, if they cannot be certain. Whether they are or not, panic could ensue, and this could consume solvent companies as well as fraudulent ones. Finally, warnings may not be heeded: public warnings from the Minister of Finance in October were not sufficient to stop the final rush into the pyramid schemes the next month. Indeed, the experience in manias throughout history has been that warnings are often overwhelmed by enthusiasm. However, following the Albanian experience, the IMF and World Bank should be aware of the possibilities of pyramid schemes emerging when the conditions for their growth are present, and should be on the lookout for such schemes.

## **B. Dealing with Pyramid Schemes**

The Albanian authorities did a reasonably good job in dealing with the pyramid schemes once they were identified. Undoubtedly the two best things that they did were to refuse a costly bailout from the budget and to freeze the assets in the banking system of the two companies with the most depositors. The latter move, in particular, saved the latest depositors, who usually suffer most, about half of their money. In retrospect, it would have been better if the authorities had frozen the bank accounts of the other companies too. It appears that a great deal of money was looted from these even after their nature was quite clear. In general, the authorities were right to take a firm hand with the operators of the schemes, and should have taken a firmer hand earlier. That they failed to do so was in part due to the weakness of the governing institutions in Albania, and in part due to the perceived need to secure the cooperation of the operators in identifying and recovering assets. There was also a certain delicacy in dealing with the depositors of the companies, many of whom had a naive faith that their deposits could be restored if the operators were allowed time to recoup their losses.

International assistance was also very important in dealing with the pyramid schemes. In a thoroughly compromised political environment, it was very helpful for the government to be able to call in international accounting firms of impeccable reputation to administer, audit and liquidate the pyramid scheme companies, and to have this work coordinated by the World Bank and the IMF, and financed by donors. It was also helpful to the authorities to be able to cite the approval and participation of the IMF and the World Bank for the drafting of the legislation to wind up the companies, and to have the steps in the winding up process supported by IMF conditionality.

The winding up experience contains some useful and encouraging lessons for authorities of other countries where pyramid schemes become a problem, but there are some more discouraging aspects to the experience. In particular, identifying and liquidating the pyramid schemes' assets is taking a great deal of time and money, and asset recovery has been very limited. To some extent this may have been due to the inadequacy of the legal framework, and to delays in the takeover, but the historical experience (for example the seven years needed to realize the assets of those implicated in the South Sea Bubble), and experience with other complicated bankruptcies, suggests that the winding up process will be a long one. For governments, there is perhaps one silver lining to this dark cloud. The violent outburst of public protest in Albania came at a time when depositors had been regularly receiving payments which suddenly stopped. At the time of writing, most depositors have not received a penny from the schemes for two years. They have learned to manage without, and to expect little. After enough time, even ten cents on the dollar looks good.

A final depressing note is that pyramid schemes and related financial scams are not likely to go away any time soon, and that people are likely to continue to fall for them regularly. In industrial countries, the Internet abounds with plausible schemes which are designed to attract the greedy and the gullible. In developing countries the fraud may be more public, the government more likely to be involved, the scale larger. Honest government and central bank officials as well as international financial institutions will need to be vigilant in identifying and crushing the frauds. But there will always be a demand for offers that are too good to be true.

### **C. Aftermath: The Social Costs of the Pyramid Schemes**

Two years on, Albania seems to have put the pyramid scheme crisis largely behind it. Other problems—political conflict in Albania, corruption in the public sector, the events in Kosovo—have succeeded the pyramid schemes as the main concerns of the public. Although almost no depositor has received any money back from the schemes since the end of 1996, and it now appears that the assets of the schemes will only be sufficient to cover less than 10 percent of their nominal liabilities, there have been few complaints or public protests in recent months. When the operator of the largest scheme was finally jailed, the event was reported only on page 5 of the leading English language newspaper in Albania.

Meanwhile, parliament has passed legislation designed to prevent a recurrence of the pyramid scheme phenomenon. In particular, a revised Banking System Law (drafted with assistance

from the IMF and designed to prevent illegal activities and ensure that only financial institutions can take deposits) was approved by parliament in June 1998, amendments to the Money Laundering Law have been prepared by the Bank of Albania, and the enforcement of the Companies Law and other commercial laws is being improved. The authorities have also finally taken action to address the weaknesses of the formal financial system. Of the three state-owned banks which dominated the formal banking system in 1996, one, the Rural Commercial Bank, has been put into liquidation, another, the National Commercial Bank, is to be privatized shortly, and the third and largest, the Savings Bank, is working under a governance contract with the assistance of foreign advisors.

However, scars remain; the social effects of the Albanian pyramid scheme phenomenon have been considerable and are still not known fully. Over 2,000 lives were lost. Thousands more were impoverished either by their unwise investments in the schemes or by the destruction of their property in the ensuing violence. A government, albeit one of dubious legitimacy, was overthrown. The arms looted during the crisis have been used in armed robberies in Albania, and provided a ready source of weapons to Albanian separatists in neighboring Kosovo. Less tangible, but also significant, are the effects on confidence in Albania. Before the crisis, Albania was a strikingly confident place, poor, beset already by serious problems of governance and growing economic problems, but also conscious and proud of having made enormous strides since the overthrow of Communism. In late 1998 Albania was a more subdued place. Confidence in the institutions of government was low, crime and corruption imposed on most people's lives, and there was an air of grimness and insecurity even in the capital. The resilience of the Albanian people is considerable, and has been more severely tested in the past. But the pyramid scheme phenomenon was a sobering setback for Albania, a powerful reminder of the social costs of unchecked criminality.

### Appendix I: The Life Cycle of a Pyramid Scheme

The table below shows the life cycle of a hypothetical pyramid scheme over the course of a year. All figures are in US dollars. The table is based on a crude behavioral model. Some investors are assumed to be relatively risk averse and hence prone to withdraw their money (although the truly risk averse would stay away from pyramid schemes altogether). Others are assumed to happily reinvest their profits. In between are those who are influenced by the rates offered that month, being attracted by high rates, but after a time being disposed to take profits and withdraw unless tempted by still higher rates.<sup>1</sup>

In the model, beginning in January, the operator offers an interest rate of 10 percent per month on new deposits, giving people the right to withdraw or redeposit interest every month and to withdraw or redeposit principal after three months.<sup>2</sup> For some months the operator attracts increasing deposits. He invests half of his proceeds (perhaps in land or showcase assets, perhaps transferring the money abroad) and keeps the rest in cash, to meet demands of depositors. However, by June people are beginning to withdraw their deposits and the cashflow turns negative. In response, the operator raises interest rates and for a while is successful in attracting new depositors and persuading existing depositors to reinvest. But the higher interest rate takes its toll on cash flow, and again new deposits fall and withdrawals increase as investors take profits, necessitating a further increase in interest rates to attract more depositors. Perhaps also, rival schemes have by this time entered the field, offering still higher rates. By the end of the year, even an interest rate of 40 percent per month is insufficient to attract more deposits than withdrawals and the interest payments are now crippling. With cash reserves about to run out, and even accumulated investments insufficient to meet forthcoming demands, the operators usually closes the scheme and flees, if his depositors or the authorities do not catch up with him first. In practice, the dynamics of pyramid schemes are likely to be even more explosive than shown, with a massive inflow of deposit at some point following a dramatic increase in interest rates, followed by panicked attempts to withdraw these deposits when the scheme's insolvency becomes clear. Depending on the flow of deposits and the interest rates offered, the life cycle may be longer or shorter, but the end is the same.

It is worth noting that net worth of a pyramid scheme is negative—the scheme is insolvent—from the first day it is in operation, but cash reserves are positive until the end. Also, of some US\$11,000 in liabilities, only US\$4,000 are of originally deposited principal.

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<sup>1</sup> The model is a development of work by Sanjay Kalra on the economics of pyramid schemes (unpublished internal IMF memorandum). The main difference are more explicit behavioral assumptions and the addition of changes in the interest rates offered by the scheme's operator in response to changes in investor sentiment.

<sup>2</sup> Such arrangements were fairly typical of the Albanian schemes, though these often featured offers of higher interest rates for longer-term (6 or 12 month) deposits.

The rest is either redeposited interest or new interest due on the most recent deposits. Therefore the true wealth loss arising from the scheme is confined to those who came in late, or who never withdrew their deposits or interest, although those who had been promised high returns may feel poorer. (In practice, it is difficult to separate principal from interest in the haphazard accounts of pyramid schemes.) The chart below gives some indication of what might be the distributional consequences for the investors. As can be seen there a few big gainers, and others who withdraw in time to make some gains. But about two thirds of depositors lose, in all cases losing their investment, in some cases getting some interest to mitigate their losses first.

Some of the depositors may also get some money back from seized assets, if the authorities move fast enough. Here the Albanian experience is interesting: depositors in "pure" pyramid schemes, which one would think of as being the most pernicious, actually fared better than those in schemes which invested in real assets. In the case of the latter, it proved very difficult both to take over the companies and to disentangle their assets and realize them, and returns from seized assets (which at the time of writing have still not been made) are likely to be very low. In the case of some of the pure pyramid schemes, on the other hand, because the operators did not know what to do with the rush of late deposits, they deposited them in the commercial banks, where they were seized by the authorities. Depositors in these schemes got back over 50 percent of their money.

A final note: pyramid scheme operators invariably argue that they are about to generate high returns on their investments. If this were true, the implied zero rate of return on investment in the model would be too pessimistic. Unfortunately, it is usually not true. Indeed, in so far as the accounts can be understood, most of the Albanian schemes lost money on their real assets, partly because of inefficiency, partly because of the tremendous opportunities for theft and fraud which the process of acquiring the assets offered.

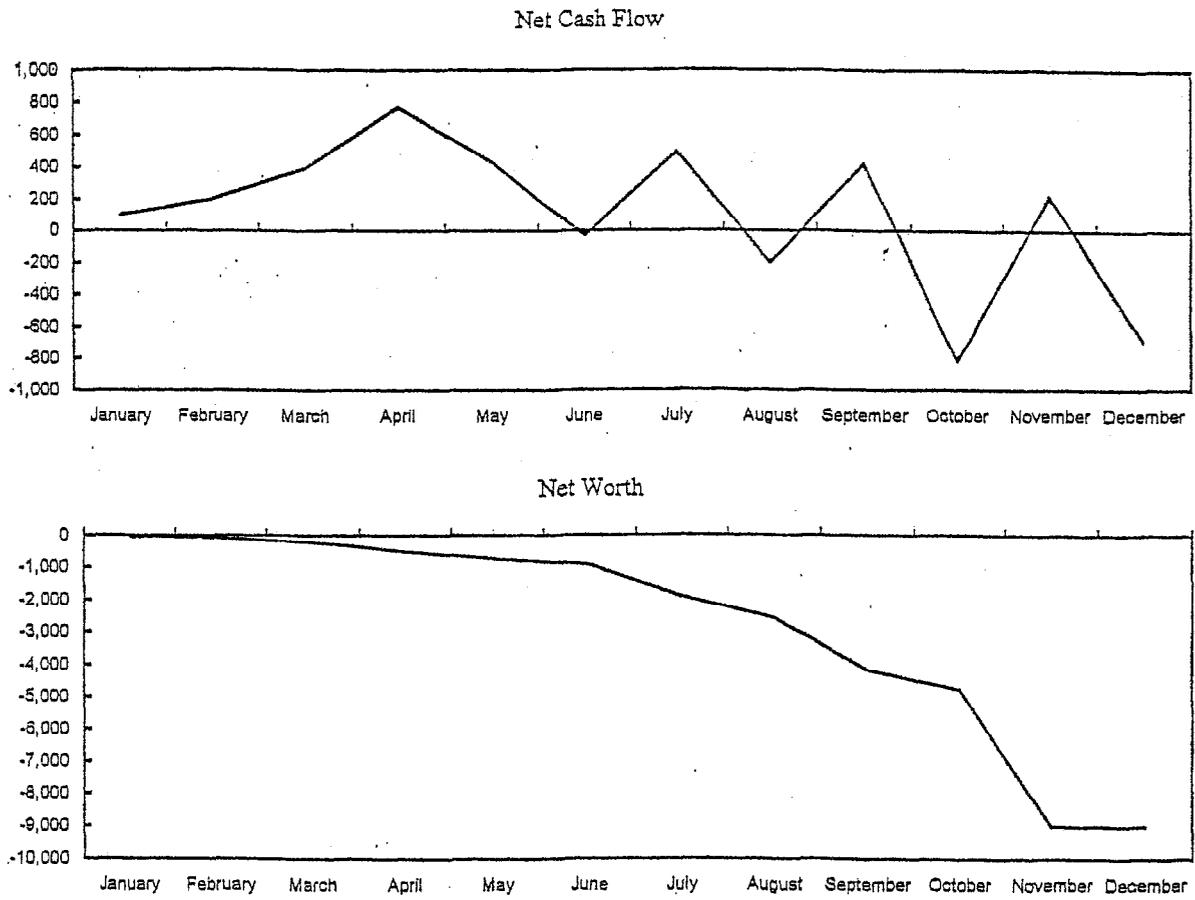
Table 5. A Hypothetical Pyramid Scheme

Month	CASH FLOW						LIABILITIES		ASSETS			NET WORTH	
	Interest rate offered	New deposits	Withdrawals	Interest due	Redeposited interest	Interest Paid	Net cash flow	Total Liabilities	of which original principal	Total Assets	of which Cash reserves		of which Investments
January	10	100	0	0	0	0	100	130	100	100	50	50	-30
February	10	200	0	10	10	0	200	393	300	300	150	150	-93
March	10	400	0	31	21	10	390	909	700	690	345	345	-219
April	10	800	0	73	43	30	770	1962	1500	1460	730	730	-502
May	10	600	100	157	87	70	430	2631	2000	1890	945	945	-741
June	10	400	300	216	82	134	-34	2778	2100	1856	911	945	-922
July	20	1000	410	234	141	93	497	4280	2700	2353	1176	1176	-1927
August	20	500	441	475	215	260	-201	4721	2800	2152	975	1176	-2569
September	30	1000	236	609	268	341	423	6725	3600	2575	1287	1287	-4150
October	30	400	780	1062	622	440	-820	6542	3300	1755	467	1287	-4787
November	40	1000	354	1302	875	427	219	10990	4000	1974	686	1287	-9016
December	40	0	686	0	0	0	-686	10304	4000	1287	0	1287	-9016
Total		6400	3307	4170	2365	1805							

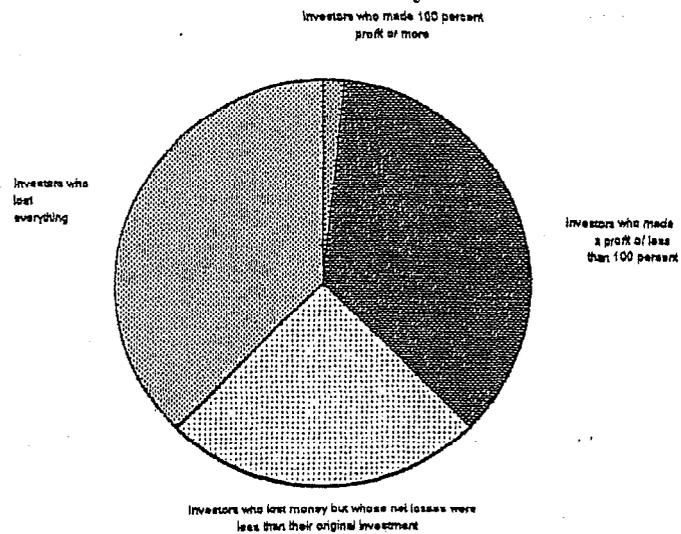
Payments due but not made

	Principal	Interest	Total
December	1022	2124	3146
January	1916	1612	3528
February	2592	1037	3629
Total	5530	4773	10304

Figure 2. Hypothetical Pyramid Scheme



Distributional Consequences



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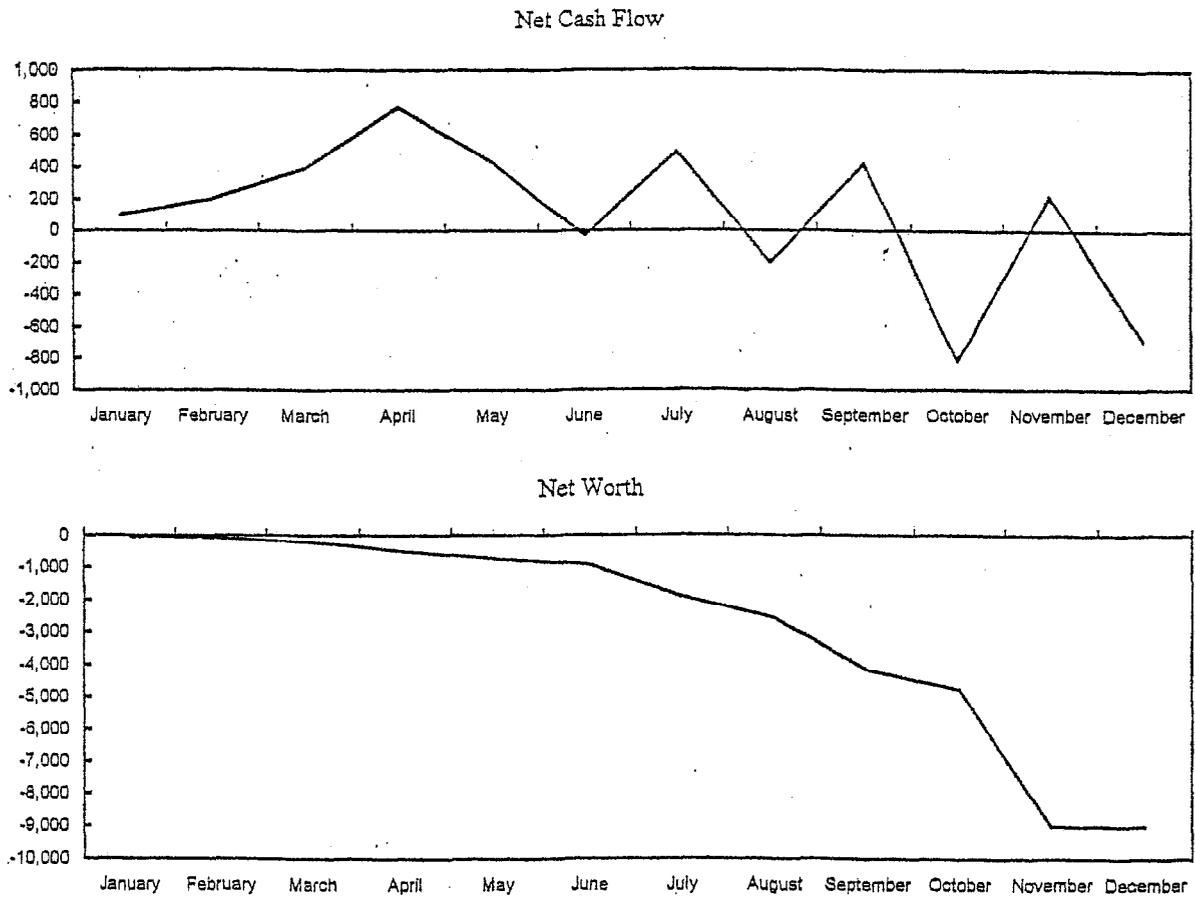
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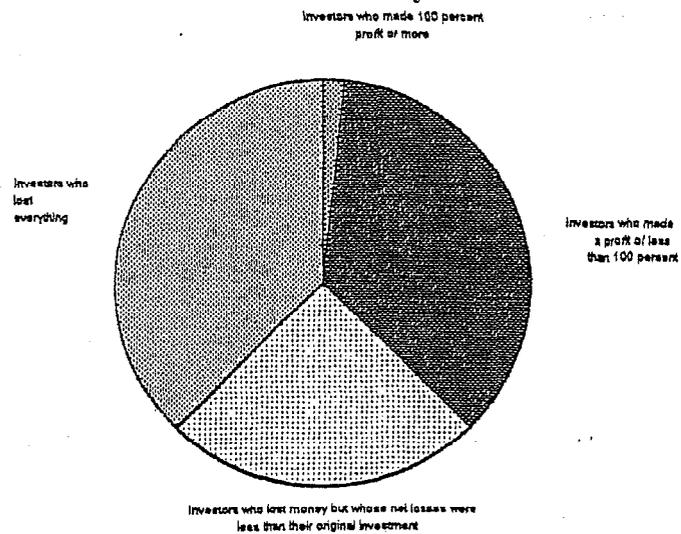
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Figure 2. Hypothetical Pyramid Scheme



Distributional Consequences



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