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A Deposit Insurance System for Armenia

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We provide an overview of the design for a system of official deposit guarantees for the Republic of Armenia. This proposed design takes into consideration the overall structure of the Armenian economy, its official institutions and the financial system. Furthermore, we outline specific design features for the Armenian deposit insurance system that are consistent with the social welfare objectives that underpin arguments for its adoption, while minimizing the distortions of these government guarantees on incentives. Key among the design features are limited coverage of deposits, separation of deposit insurance from central banking, and extended liability of banks for losses incurred by the deposit insurance fund.

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A Deposit Insurance System for Armenia

One of the widely cited reasons for the collapse of the USSR is the absence of market incentives. It is not surprising, therefore, that after the breakup of the former Soviet Union the post soviet countries were faced with a difficult transition from an economic system based on central planning to a market-oriented one. This process of transition can be long and arduous because the at the most fundamental level market economies require the presence of system of enforceable private property rights, which are an anathema in centrally planned socialist societies. Therefore, the success of market-oriented reforms is conditioned upon fundamental legislative reforms, including well-defined constitutional rules establishing property rights. Moreover, these reforms must include a legal infrastructure within which private contracts can be written and enforced.

The Republic of Armenia (Armenia) was founded on September 21, 1991; following the breakup of the USSR. Since that time, Armenia has struggled with making the transition to a more market-oriented economy. It has had some success putting in place needed legislative reforms (especially in legal environment), but unfortunately, there is considerable work left to do. This is especially true in the establishment of the regulatory infrastructure to support and promote the development of Armenia's financial sector.

An important early step of reform in transition economies is the development of market-oriented financial institutions. Financial market development is the key to providing cheap and reliable funding for small business and agriculture, critical to a developing nation's growth. In addition, financial institutions provide an alternative to currency and other non-interest-bearing assets for individuals to hold their savings. A

stable financial sector should provide benefits to the economy by increasing the level of savings and lower the cost of investing in productive activities.

Economic reforms in Armenia were mainly aimed at the following problems; the solution of some of them is still underway:

- Liberalization of prices and salaries;
- Establishment and development of the institution of private property, privatization of state enterprises and state property;
- Liberalization of foreign trade;
- Establishment of financial institutions and financial management bodies (Central Bank, Securities Commission);
- Establishment of the new system of state finance management;
- Attraction and promotion of direct foreign investment, etc.

A positive factor in future growth of the Armenian economy is its high ranking in economic freedom. The Republic of Armenia is ranked in the 'mostly free' category by Freedom House index in 2003[1]. In addition, Armenia's success in terms of economic reforms has been accompanied by membership in the Council of Europe in 2001 and the World Trade Organization in 2002.

To date, growth has been encumbered by the inability of Armenia to attract foreign capital (see Figure 2). Many factors have made Armenia an unattractive place for foreign firms to invest, including: the small size of the Armenian market, the poor investment climate, and isolation from the neighboring markets. The poor investment climate stems from internal problems that both impede the development of financial markets in Armenia and in turn hinder the attraction and promotion of foreign investment, mainly:

[1] In 2003 Armenia is 44 by ranking according to index of economic freedom 2003, and it's overall score is 2.65 (2.70 in 2002) and by scores of Freedom House-partly free in 2002 (4.4). See http://cf.heritage.org and www.freedomhouse.org.

corruption and bureaucracy; inefficient tax and customs administration; failure to implement agreements to provide an efficient legal framework, resolution of economic disputes and bankruptcy processes (especially in the banking sector).

As in most emerging economies the establishment of a politically independent central bank is an important part of the financial system infrastructure. In Armenia, the central bank is responsible for monetary policy, providing liquidity support for the financial system, and regulating financial institutions.[2] Typical for a transition economy, the banking system makes up nearly the entire financial system and hence, a well-functioning banking sector is critical to economic development.

We take as given that the Republic of Armenia is committed to the establishment of an independent deposit insurance agency to provide a minimum level of deposit guarantees – a level consistent with protecting the savings of small depositors – to enhance the stability of the primary channel for credit in Armenia. Moreover, the Republic of Armenia may need to establish some form of deposit insurance system as part of the conditions for aid from international bodies such as the IMF and the World Bank. Recent literature (Kane [2000], Demirgüç-Kunt and Kane [2002], and Demirgüç-Kunt and Detragiache [2000]) on the adoption of deposit insurance systems outside the United States points to the importance of tailoring the deposit insurance scheme to fit the cultural and legal traditions, as well as the institutional structure, of the Republic of Armenia. Therefore, a careful analysis of Armenia's legal and economic structure must be done prior to the design of the deposit insurance system.

[2] The Armenian Law on "The Central Bank of the Republic of Armenia" was adopted in March 27 1993.

The Armenian Economy

The Armenian economy has faced a difficult transition to a market-oriented economy. During the Soviet regime, the former republics were strongly connected to each other. The Soviet economy operated like of a central-planning trade zone where production of goods was allocated across republics. Flows of inter-republic trade reflected the initial allocation decision. The collapse of the centrally planned allocation system disrupted trade between the former republics and the lost trade, markets, and/or methods of resolving inter-republic affairs caused a dramatic decline in economic activity in these countries. Over 1990-2001, annual growth in GDP for Armenia was about -0.70%[3]. However, as Armenia has instituted market-oriented reforms the Armenian economy has sped up. Over the past three years Armenia's real GDP increased 6% in 2000, 9.6% in 2001 and 12.9% in 2002. Per capita GDP, as Figure 1 shows, has also been growing during the three years.

Declines in real activity following the collapse of the USSR were broad-based. Many sectors of the Armenian operated below 1990 levels even a decade later (see table 1). Still, agriculture recovered in the late 1990s and its output materially exceeds 1990 levels.

Agriculture plays a crucial role in Armenian economy as over a quarter of the Republic of Armenia's GDP (25.5 percent in 2002) is produced by this sector. The share of agricultural product in the GDP during 1994-2002 can be see in Figure 9 and the structure of gross agricultural output of RA is presented in Table 2. An important advantage for Armenia in its development is self-sufficiency in producing the main

[3] See the World Development Report 2003, p. 238.

agricultural products consumed by its population (see table 2) lessening the need to generate foreign-exchange reserves to import foodstuffs.

The industrial sector – mining, manufacturing, and utilities – accounts is the second largest sector of the Armenian economy accounting for 22.7 percent of GDP in 2002 (see figure 10). The level of output for each component of industrial production, as well as the relative shares of mining, manufacturing and utilities (production and distribution of electricity and water) can be seen in tables 3 through 5. Not surprisingly, as table 1 shows, the level of industrial output was severely affected by the trade disruptions following the breakup of the Soviet Union, dropping to less than 40 percent of 1990 levels by 1992. Despite nearly continuous growth in industrial output since 1993, growth has been slow and 2002 levels of real output are slightly more than half of 1990 levels.

Relative to its main trading partners (Belgium, Iran, Russia and the United States) Armenia has low labor costs. Moreover, the Republic of Armenia has very few barriers to trade and foreign investment.[4] Low labor costs and a stable legal framework for exporting goods has failed to promote a rapid expansion of industrial production, in part, because of Armenia's antiquated capital stock. As we will discuss later, the modernization of Armenia's capital stock to date has been hindered by an underdeveloped financial system and generally poor domestic investment environment.

As seen in Figure 12, despite a self-sufficient position in agricultural production and energy production, Armenian continues to experience large trade deficits. While the size of the trade deficit has been shrinking, the current account deficit in 2002 was 483.8 million USD, or about 78 percent of Armenian GDP (without humanitarian aid the

[4] According to Heritage foundation evaluations the score of Armenian trade policy is 1, which means very low level of protectionism and absence of non-tariff barriers (see 2002 Index of economic freedom p. 95).

current account deficit is about $472.1 million USD). Moreover, excluding agriculture and energy, Armenia is a net exporter of just one commodity - artworks (about 0.73 million USD)[5]. One growing area of trade that has positive implications for the Armenian economy is precious stones. From tables 6-11 one can see that precious stones has makes up the largest share of imports and exports. The reason for this is the low cost of labor in Armenia. Belgium exports diamonds to Armenia where the labor-intensive process of refining diamonds is done. The refined gemstones are then exported back to Belgium. In 2002, diamonds accounted for 42 percent of the 507.2 million USD of exports.

Legal Institutions and Structure (Executive, Legislative, Judiciary Bodies)

Since 1991, an independent Republic of Armenia has continued on its course of fundamental reforms towards a democratic society. This process of reforms resulting, in many cases, in the of creation of the new institutional systems needed for establishment of civil liberties, the transition to a market oriented economic system, the creation of a legal framework and the establishment of the rule of law, and the formation of democratic state governance remains ongoing. In accordance with the principle of separation of powers, the legislative, executive and judiciary branches of the government were separated. The institution of the RA President was introduced[6], the institution of the Prime Minister was established, the creation of the Constitutional Court of the Republic of Armenian was envisaged, and the election system was upgraded. In 1995, the RA Supreme Council was replaced with the RA National Assembly (Parliament).

[5] In 2002 total volume of export of RA was 507.2 million USD; import was 991.0 mln USD.
[6] In June 1991, in accordance with the "Law on the Republic of Armenia President" was adopted by the Supreme Council.

The RA President is the head of state. He is a political figure, who coordinates and unites the activities of all branches of state power[7]. The RA President appoints the Prime Minister and, by the Prime Minister's motion, appoints the members of the RA government. The executive power in the RA is also implemented by the RA government, which is a collegiate body and consists of the prime minister and ministers. The RA prime minister occupies a special place in the government. Based on the Constitution, laws, Parliamentary and Presidential decrees, the prime minister is the head of the executive branch directing managing the current activities of the government and coordinating the work of the ministers.

Legislative power in the Republic of Armenia is implemented by the Parliament, which works in three domains: legislative, monitoring and organization of the work at the Parliament. The Armenian Parliament consists of one chamber and has 131 members. Adoption of laws is the key function of the Parliament[8].

The third branch of government, the judicial system, consists of two bodies: the judiciary and law enforcement. The Constitutional Court of the Republic of Armenia performs the central role in the Armenian judicial system. The Constitutional Court has nine members, from which five are appointing by the National Assembly, and four by the President. The decisions of this body are the final, with no provision for appeal.

The Armenian Financial System

The particular importance of the banking system in the financial sector lies in its economy widespread connections, through which firms rely heavily in bank credit to

[7] The Republic of Armenia President is not a subject of legislative initiative, however, without the signature of the President the law adopted by the Parliament cannot come into effect. At the same time, the Presidential veto has relative, postponing effect.
[8] The priority is given to the adoption of the main financial law of the state.

finance their operations and investment.[9] The current unattractiveness of Armenia to foreign investors means that economic development, at least initially, must be financed from the domestic savings pool.

It is well-established that the level of financial development is strongly associated with growth in real per capita GDP growth, capital accumulation and economic efficiency.[10] A sound financial sector also helps to create employment in other sectors of the economy. Growth and stability in the financial sector raises the standard of living in an emerging market economy.[11] Financial stability is important because it increases public confidence in the financial. This in turn, allows the pool of savings to be productively employed in the financing of small business and small agricultural enterprises, the primary source of growth and new jobs in Armenia.

The banking sector plays crucial role in the development of Armenian economy. The main reason is that Armenia's banking system is by far the largest and most important component of the financial system; as markets for direct finance and other forms of financial intermediaries are still in their infancy. Some indicators of financial sector development and dollarization in the Republic of Armenia are presented in table 12.

The banking system has shown relatively stable growth since 1998 (see Figure 3). Banking system (capital) share in GDP also increased up to 2.9% in 2001 (2.6% in 2000). In spite of this, the banking sector remains very small compared to the size of the overall economy. In 2001, the banking system assets ratio to GDP was 20%, the loan portfolio to GDP ratio was 9%, and the ratio of household deposits to GDP was 5%. Total loans 7 %

[9] For example, see the data provided by Stiglitz J.E. "The role of the state in financial markets" (1994).
[10] Robert G. King and Ross Levine "Finance and Growth: Schumpeter Might be Right," Quarterly Journal of Economics, CVIII, no. 3(August 1993), 717-738.
[11] See David Dollar and Aart Kraay "Growth is good for the poor" March 2000.

and total deposits approximately 12.1 % of GDP in 2002. A comparison of Armenia's financial sector development with respect to other countries in its region that are at comparable stages of transition can be found in Table 13.

A contributing factor to the small size of the Armenian financial system relative to Western countries is the near absence of retail banking market in Armenia.[12] New services are developing extremely slowly: a system of credit cards – ArCa was introduced just recently. Other financial institutions – insurance companies, pension funds and capital-market-related financial institutions have yet to emerge as meaningful players. Moreover, an efficient channel for direct finance is practically absent as Armenian stock market development is in its infancy. [13] The population in general has little contact with the banking system either by means of depositing their savings or by means of borrowing. Margins of lending remain significant, suggesting high administrative costs and other inefficiencies.

There are a number of problems in the Armenian banking system that impede its growth and development. These include,

The small size of most banks:

Since July 1 of 2002 the banks are required to have a statutory capital of about 1.450 million USD, after (from July 1 of 2003) total required capital for the banking system will rise to 2.0 million USD. In 2001, there were 30 banks operating in Armenia. Since November of 2001 there have been several bank failures and at the end of 2002 there were only 22 banks are operating in the market. This consolidation of the banking

[12] Dollar deposits are mainly in saving accounts. Cash is the dominate form of payment as most Armenians still don't use checking accounts or credit cards.

system has left 5 banks in control of over 70% of total bank capital. According to data provided by CBA the top three banks in terms of size accounted for 40.3% of bank assets in 2002. The small size of most banks in Armenia precludes them from attaining economies of scale. Specifically this prevents the banks from incurring large fixed costs of technological modernization. For instance, Lucas (2001) notes that basic credit scoring models cost in excess of $150,000 and the total investment in systems required to implement a credit scoring system is around $1,000,000.

Weak credit culture:

Prior to Armenia's independence, bank lending involved making loans to state-run companies and the government as part of the centrally planned economy directed much of the lending. Even today government debt makes up a large share of banking assets in Armenia. Hence, credit evaluation and a strong credit culture was not part of the lending process prior to 1991. Development of strong monitoring and management practices in the area of lending is underway, but there is still a considerable work to be done. Improvements in customer service are needed before the banks can engage in relationship-based lending. In addition, despite the rapid advances in credit scoring models and other credit evaluation and management tools worldwide, Armenian banks have been slow to adopt these as part of their credit evaluation process. Not only is the development of good underwriting standards for bank loans important to the strength of the banking sector, and by implication public confidence in banks, sound credit evaluation and policies are critical to efficient and effective financial intermediation.

[13] Although the Ministry of Finance and Economy, which regulates the insurance industry, allows the presence and operation of foreign insurance companies, in 2001 insurance premiums share in GDP was negligible-just 0.18%. According to 2002 data stock market capitalization of RA is 0.058% of GDP.

After all, the contributions of the banking sector to economic growth hinge on how well it does in allocating Armenia's savings pool to investment projects.

Financial Regulatory Structure

The key laws governing the banking system are the Law on the Central Bank and the Law on Banks and Banking activities. Other laws relevant for the banking sector are Law on Bankruptcy of Banks and the Law on Secrecy.

The financial infrastructure in Armenia consists of two formal governmental bodies: 1) the Ministry of Finance and Economy, which is a part of Government structure and operating upon Government decisions and 2) the Central Bank of the Republic of Armenia which management structure is described below.

The Central Bank Board is the governing body of the Central Bank. The Central Bank Board consists of the chairman, his deputy and 5 members. Chairman of the Central Bank and Deputy Chairman of the Central Bank are included in the Central Bank Board according to position. The President of Armenia appoints the Central Bank Board members for a period of 5 years. The Chairman and Deputy Chairman are appointed by the National Assembly, at the presentation by the President, for a period of 7 years.

The Central Bank of the Republic of Armenia (CBA) isn't just the monetary authority it also regulates the banking system to ensure its safe and sound operation. This regulation is motivated by the role banks play in the monetary transmission mechanism and hence, banking stability is important for the purpose of insuring price stability. The Ministry of Finance and Economy regulates the non-banking sectors of the financial system, like the insurance market.

Besides conducting open market operations, the CBA also serves the lender of last resort to the banking system. General liquidity support to the financial system is provided by the CBA through a Lombard facility, any time in the operational day. The lending rate of interest (Lombard loan rate) is determined by Board of the CBA for the given two-week period.

A Proposal for an Armenian Deposit Insurance System

Deposit insurance should be implemented as part of a broader program of economic and financial system reforms. It is well known that an unintended consequence of federal deposit guarantees is moral hazard, which can lead to socially sub-optimal risk taking by insured institutions and reduced system stability. Hence, the implementation of deposit insurance would properly be done as the last part of a financial reform package, and as a complement to reforms that improve the efficiency and stability of the banking system. It is critically important that the deposit insurance system (DIS) be designed to fit the legal and social traditions of Armenia and be consistent with the social welfare goals used to justify the DIS's existence.

Social Welfare Goals for Deposit Insurance

Adopting an explicit deposit insurance scheme will help promote the stability of the Armenian banking system in two ways. First, it will provide Armenian policymakers the opportunity to credibly withdraw implicit government guarantees of bank liabilities and will place a buffer between the losses in failed banks and the public treasury. It easier, in principle, to contain the subsidies associated with explicit deposit guarantee schemes than implicit ones, and by implication less difficult to mitigate the perverse incentives of a system of explicit guarantees than implicit ones. Second, a properly designed and

implemented system of explicit deposit insurance should improve depositor confidence in the small banks in Armenia, allowing them to grow and compete effectively with the larger banks in the banking system. Increased competition among banks will force banks to improve their risk management systems and processes and hence, enhance asset quality and the strength of earnings. Moreover, by reducing the concentration in the Armenian banking system the adoption of explicit deposit insurance is one step towards curbing the view that the three largest Armenian banks are too-big-to-let fail, thus improving market discipline and long-run system stability.

The primary social welfare goals for an Armenian deposit insurance system are the protection of small savers, capital accumulation, and increased financial intermediation. These goals are mutually reinforcing, as the crucial point of adopting DIS is that small savers have confidence that bank deposits are safe savings vehicles and hence, they will place their savings into the banking system. This in turn, will increase the proportion of the savings pool available to fund business investment and hence, promotes economic growth and development. The current inability of Armenia to attract meaningful amounts of direct foreign investment makes improving the intermediation of domestic savings even more imperative.

Deposit insurance systems around the world vary in the amount of coverage they provide.[14] For countries adopting a deposit insurance scheme the International Monetary Fund typically offers one or two times per capita income as a rule of thumb for appropriately limiting coverage.[15] However, the capital accumulation social welfare objective provides us with a more precise guideline for setting the coverage limits.

[14] See Kane and Demirgüç-Kunt (2001).
[15] See Garcia (1999).

Therefore, such reasonable deposit insurance coverage ceiling, consistent with social welfare, is the average amount of funds needed for the establishment one additional working place in the industry.

Basic Structure of Deposit Insurance System for Armenia

There are four decisions that must be made as part of the setup of a deposit insurance system. First, what types of liabilities/deposits are to be covered and to what extent? Second, how will the deposit guarantees be priced? Third, what type of fund will be established and how will it be capitalized? Fourth, how will the DIS fit into the regulatory infrastructure of the Republic of Armenia? The answers to these questions are pivotal in determining how well DIS can deliver the intended social benefits at the lowest resource costs.

Coverage

It is well-established that empirical research supports the hypotheses that narrow coverage enhances market discipline and reduces moral hazard[16]. The narrow coverage specifically means excluding certain types of deposits. For example, it is common to exclude interbank deposits from deposit insurance coverage. One reason for this is that banks through the interbank market serve as an important source of market discipline that complements official regulation. It is also undesirable to extend insurance coverage to foreign-currency deposits in Armenia.[17] Guaranteeing deposits denominated in foreign currencies would complicate the resolution of officially failed banks by requiring the DIS to convert its assets into foreign currencies – and likely at a time when foreign exchange is at a premium. Alternatively, it would require the DIS to hold its insurance reserve in

[16] See E. Kane and A. Demirgüç-Kunt (2002).

foreign denominated assets, thereby reducing investment in Armenian assets and offsetting some of the social benefits of deposit insurance. Finally, excluding foreign-currency denominated deposits from deposit insurance coverage would put pressure on government authorities to operate the deposit insurance system more efficiently.

One of the key points, that needs to be discussed during DIS adoption is the determination of the limits of coverage on those types of deposits eligible for government guarantees. The purpose of such limitations is two-fold. First, most of the social benefits from deposit insurance are captured with low levels of deposit insurance coverage, and a decreasing marginal benefit as coverage levels are increased. Second, the marginal social cost of government-provided deposit insurance is an increasing function coverage levels. The increasing social costs of official deposit insurance derive from its impact on the risk taking incentives and efficiency of commercial banks' management. This is something that was well understood by economists and policymakers at the time the United States adopted federal deposit insurance as part of the Glass-Steagall reforms of 1933.[18] Clearly, the net social benefits of official deposit guarantees are the highest under a system of partial coverage, and with fairly low coverage limits.

As we can see from cross-country analysis [see for instance Demirgüç-Kunt (2001)] the amount of deposit insurance coverage varies across countries. While the coverage limits in each country will be a function of many country-specific factors it is the case that the level of coverage appears to be positively correlated with level of economic

[17] The omission of foreign-exchange deposits from deposit insurance coverage would reduce the incentives to hold dollars and thereby, might reduce the level of dollarization in RA (41.1% in 2002, see Figure 4).
[18] See Emerson (1934) and the Association of Reserve City Bankers (1933).

development of the country.[19]

To derive the optimal ceiling on deposit insurance coverage requires a detailed cost-benefit analysis that is well beyond the scope of this paper. We propose an alternative method for arriving at the coverage limit that links deposit insurance coverage to one of the objectives for DIS, to promote the holding of savings in the form of bank deposits to promote economic development. From this objective we have tried to evaluate a reasonable boundary values of deposits to be insured. As such, we consider the average sum of savings needed for the establishment one additional working place in the economy. So this sum (average size of investment) grossed up by some reasonably small number to account for additional working capital needs should be the basis for setting the ceiling on deposit insurance coverage.

One feature of Armenian deposit insurance that merits consideration is the adoption of a graduated system of guarantees, or coinsurance for deposit balances in excess of the fully insured limit. Essentially, the graduated system would guarantee 100 percent of deposits up to the limit established using our 'average sum of investment required to establish a small business' limit, and some declining percentage of deposits above that limit. For example, the original plan for deposit insurance in the United States had the following graduated structure:

First $10,000	100 percent
$10,001 to $50,000	75 percent
$50,001 and up	50 percent.

Premiums

[19] The coverage varies, ranging from 0.2 times per capita GDP in the Ukraine to 19.4 times per capita GDP in Chad. Coverage limits average 20,660 US dollars per deposit for all countries, but range from as low as

It is, perhaps, not surprising that the price nations charge for official deposit insurance coverage varies widely across countries, with the percentage charged for coverage connected with the level of financial depth and development in the country. The cross-country studies of deposit insurance find that the insurance premiums are range from 0.005% (Bangladesh) to 2% (Venezuela) of insured deposits.[20]

As we know from theoretical literature deposit insurance should price the estimated risk the bank passes through to the insurer. To estimate bank risk and set deposit insurance premiums, regulators typically use qualitative indicators collected from on-site and off-site bank examinations, together with accounting-based indicators, such as CAMEL-type indicators. [21]

At this point in time arriving at a system of fully risk-adjusted premiums for deposit insurance for Armenian banks is problematic at best. Such a system would require more sophisticated banking accounting systems and more granular regulatory data collection on than is currently feasible. In addition, it would require the adoption of mathematical and financial modeling that is currently beyond what official agencies are capable of producing at this time. Moreover, the preponderance of evidence suggests that the explicit pricing of deposit insurance is of second-order importance relative to "loss control." For one, fair value of deposit insurance depends on the both the probability of default by a bank and the loss to the insurance fund given the default. Ronn and Verma () show how the fair value of deposit guarantees is conditioned upon the loss threshold at which the failure of a bank is officially recognized. In addition, Buser, Chen and Kane (1981) show how regulation can used to implicitly adjust the value of deposit guarantees.

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120 US dollars in the Ukraine to as high as 243,520 US dollars in Norway.

[20] See Laeven (2002).

Hence, while truly risk-based premiums are a desirable feature of any official deposit insurance scheme, coverage and closure policies are more critical. Hence, we argue that initially a risk-related premium system should be established as an interim step towards fairly priced guarantees. As such, we recommend that the Republic of Armenia adopt a premium system similar to that adopted by the Federal Deposit Insurance Corporation in the early 1990s where banks are divided into 9 premium classes based on regulatory/examination rating and overall capitalization. Premiums should be assessed initially according to total risk-adjusted bank assets with adjustments made for off-balance sheet exposures – until the fund is fully capitalized – and then only on insured deposits. We recommend that the initial premium schedule be set with the lowest premium in the range of 8 basis points and the highest no greater than 100 basis points.

Finally, the interim deposit insurance pricing scheme should have an explicit sunset date. We recommend that five years after the adoption of deposit insurance or two years after the adoption of the Basel II capital standards, which ever comes first, a full –risk adjusted pricing schedule be adopted. Moreover, the enabling legislation should require the commission of a study of risk-adjusted premiums to be undertaken within a year of enactment. Finally, the DIS of Armenia should explore reinsuring some of its exposure abroad, either through private reinsurance agencies or through multinational lenders such as the International Monetary Fund.

Fund

The level of the explicit deposit insurance reserve (henceforth, fund) is less important than the fund's call on taxes and special assessments on depository institutions should the fund become depleted. There are, therefore, three general decisions to make concerning

[21] *Ibid* footnote 22.

the deposit insurance reserve (henceforth, fund). First, what is the mechanism for initially capitalizing the fund? Second, what level of the fund should be established? Third, how should shortfalls in the fund be addressed? Ideally, the initial capitalization of the fund should not result in the capital impairment of any insured institution and should not be done using resources of the CBA. Given the political infeasibility of direct or indirect taxpayer capitalization of the fund, as was the case with the initial capitalization of the Federal Deposit Insurance Corporation's fund in the United States,[22] we suggest the following mechanism be used. After determining the initial level of the fund the Republic of Armenia should issue bonds to capitalize the fund. The bonds would be paid-off over a ten-year period out of premium income. The DIS would have the authority to charge an additional 20 basis points per dollar of assets if needed to service this debt. Given the lack of development and depth of financial markets in Armenia it is unlikely that these bonds could be placed with private investors. Therefore, we suggest that banks be required to hold these bonds up to a limit of three percent of their assets. Banks would be free to sell the bonds to other financial institutions and private investors (foreign and domestic). However, the Central Bank would be forbidden to invest in the DIS bonds and except for emergency borrowing DIS bonds would not be eligible collateral for CBA Lombard loans.

The ongoing or operating fund should have the resources to simultaneously handle the costs of resolving the two largest banks in Armenia. The DIS would not have access to borrowings from the CBA. However, the DIS would have two additional sources of

[22] The surplus in the capital accounts of the Federal Reserve Banks was used to initially capitalize the FDIC's insurance reserve. While the Reserve Banks were given securities in exchange for the surplus, they proceeded to charge-off of these claims against their earnings until the securities were completely written off. In effect, the FDIC's fund was capitalized using seigniorage revenues (taxes). See Todd (1988).

funds. First, if the DIS fund is depleted the DIS would have the authority to levy an assessment equal to two percent of insured deposits on member institutions. Second, should such an assessment prove inadequate to handle impending failures the DIS will be able to borrow against an emergency backup line of credit from the Ministry of Finance and the Economy. However, the drawing of the line of credit could only be done if a majority of the DIS board, the Chairman of the head of the Central Bank and the Minister of Finance and the Economy sign a letter authorizing its use.

The DIS fund should be invested primarily in the official debt of the Republic of Armenia with a limited amount of cash reserves. It is our recommendation that, if practical, the receivership function associated with resolving the affairs of closed banks be handled by an agency separate from the DIS. This will reduce some conflicts of interest between the receivership function and the insurance function that exist in the U.S.'s Federal Deposit Insurance Corporation, make losses to the fund more transparent, and avoid tying up DIS reserves in illiquid assets.

Finally, should the DIS insurance reserve fall below the statutory minimum, as defined above, the DIS will have the authority to assess a special premium of up to 20 basis points against the assets of insured depository institutions. It is recommended that when the fund reaches a level that is in excess of 150 percent of the statutory minimum that 50 percent of premiums be rebated to the banks (so long as there are no outstanding capitalization bonds or outstanding balances on the emergency lines of credit).

Membership

Ideally, membership in a system of deposit insurance would be voluntary, with appropriate entrance and exit fees to prevent free riding. Entry and exit by banks would serve as signal to regulators as to the underlying condition of the fund and reduces the

incentives for regulatory forbearance. However, it is not clear that a voluntary fund could be operated in an emerging market nation, particularly one with an underdeveloped financial system. Hence, we recommend that as a condition of charter banks be required to belong to the DIS for a minimum of ten years.

Regulatory Infrastructure

As one goal of DIS is to protect small savers there is no justification for providing de jure or de facto guarantees of large deposits. Large depositors and other financial market participants must have the incentive to provide market discipline to the banking system. Moreover, the structure and operation of the DIS must be consistent with needs of uninsured claimants to protect themselves from loss without triggering large scale runs on the banks or implicit protection from the DIS. This means adopting a governance structure for the DIS that is independent from political influence, but has input from market participants and other regulatory bodies.

We suppose that this structure's members can represent and divided by the following logic. The structure (board of governors) members (7) can be divided by the following scheme: the president of the Union of Banks of Armenia, two additional members elected by the banks in the DIS, the Chairman of CBA, the Minister of Finance and Economy, and two political appointees, one of whom will serve as DIS Chairman. Of the political appointees, only one can be a member of the majority coalition in the Parliament. The Chairman of the CBA and the Minister of Finance and the Economy will serve as non-voting members on the DIS board of governors.

Conclusion

Increasingly developing nations, spurred on in part by international lending agencies, are looking at deposit insurance as the magic bullet of financial system reform. Stabilization and development of the financial system, which in most transition economies is the banking system, is considered a critical part of economic development. The link between the depth of financial system development and economic growth is well documented in recent empirical work.

The 1980s experience of the United States with federal deposit insurance provides a stark reminder that government guarantees of deposits is not a panacea. Moreover, recent studies of deposit insurance in developing nations illustrates how poorly designed system of government deposit guarantees can be destabilizing. Hence, the addition of explicit deposit guarantees to a country's official financial safety net should be done only after careful consideration, specifically taking into account country circumstances in its design.

We provide an overview of the design for a system of official deposit guarantees for the Republic of Armenia. This proposed design takes into consideration the overall structure of the Armenian economy, its official institutions and the financial system. Furthermore, we outline specific design features for the Armenian deposit insurance system that are consistent with the social welfare objectives that underpin arguments for its adoption, while minimizing the distortions of these government guarantees on incentives. Key among the design features are limited coverage of deposits, separation of deposit insurance from central banking, and extended liability of banks for losses incurred by the deposit insurance fund.

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Figure 1. GDP per capita in RA 1997-2002

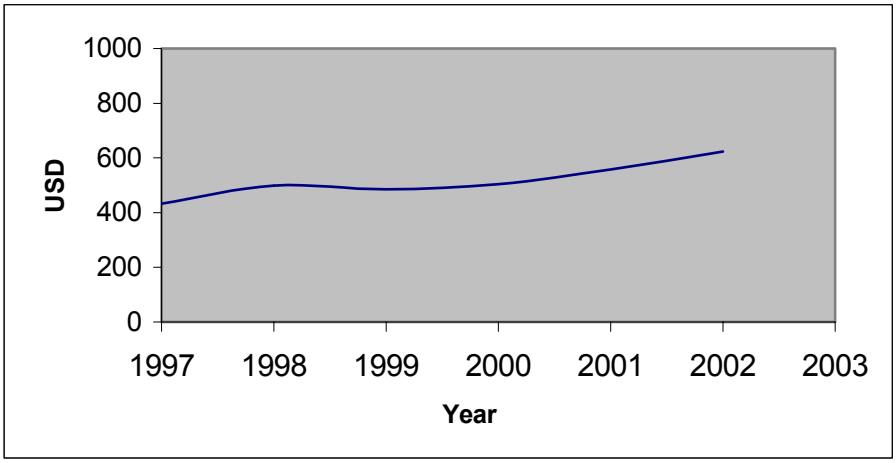


Figure 2. Direct investments in RA 1995-2002

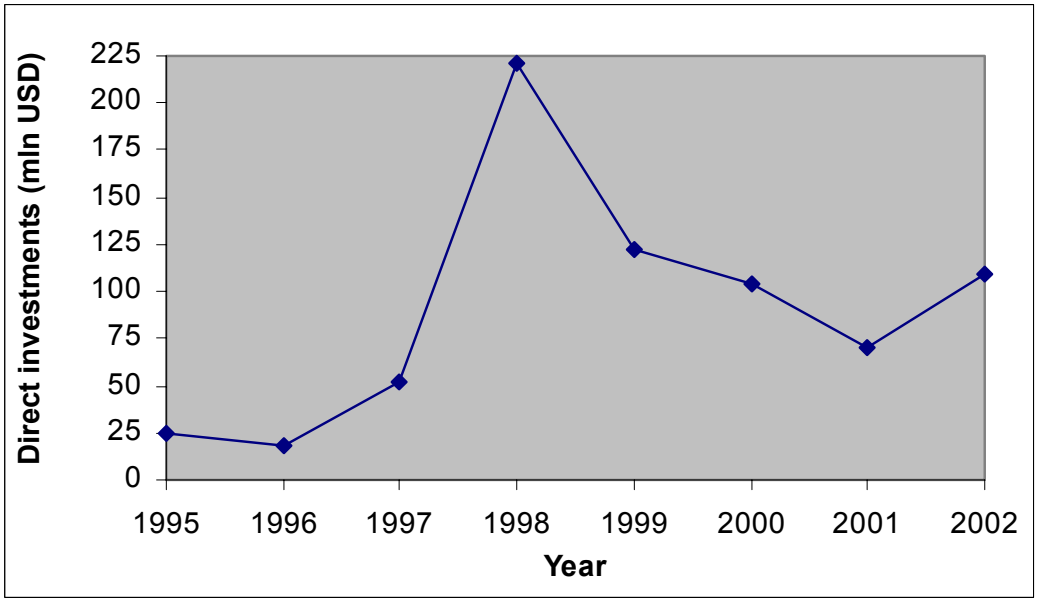


Figure 3. The total volume of deposits in commercial banks of RA[23]

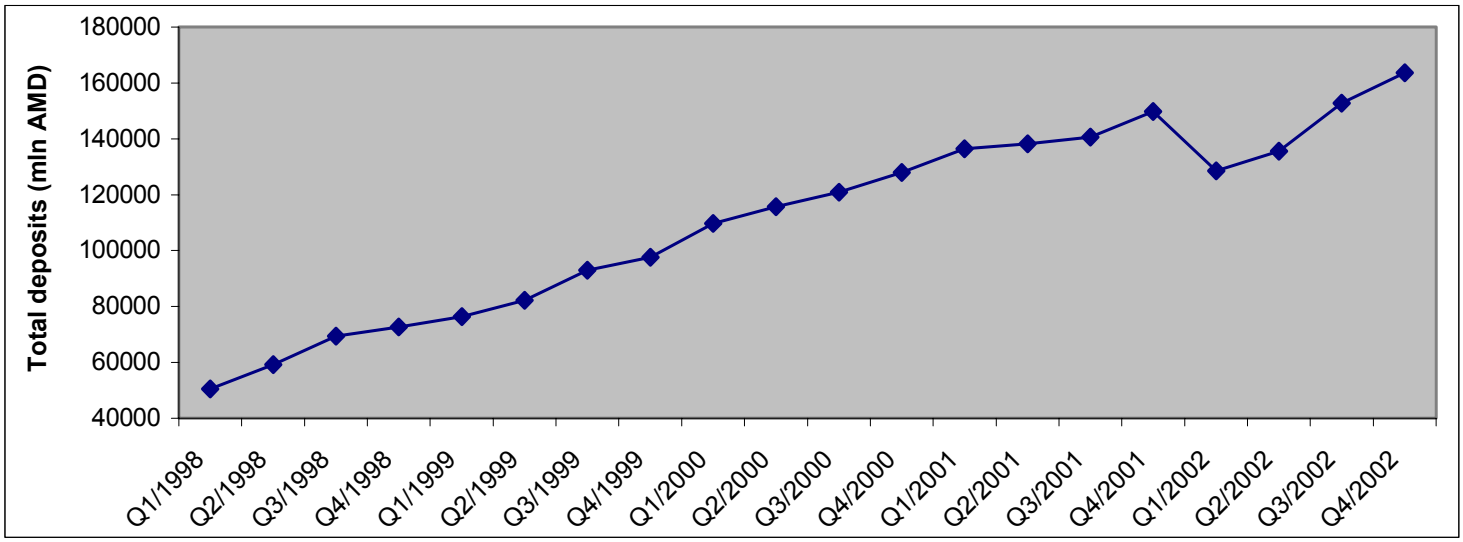
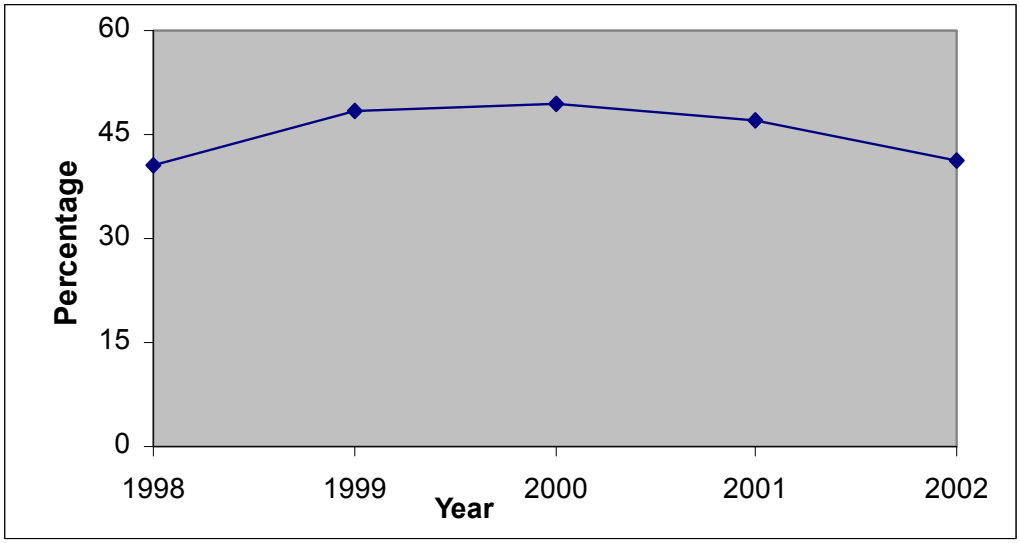


Figure 4. The degree of dollarization of Armenian economy



[23] CB and Tacis Economic trends.

Figure 5. The structure of deposits in RA 1998-2002[24]

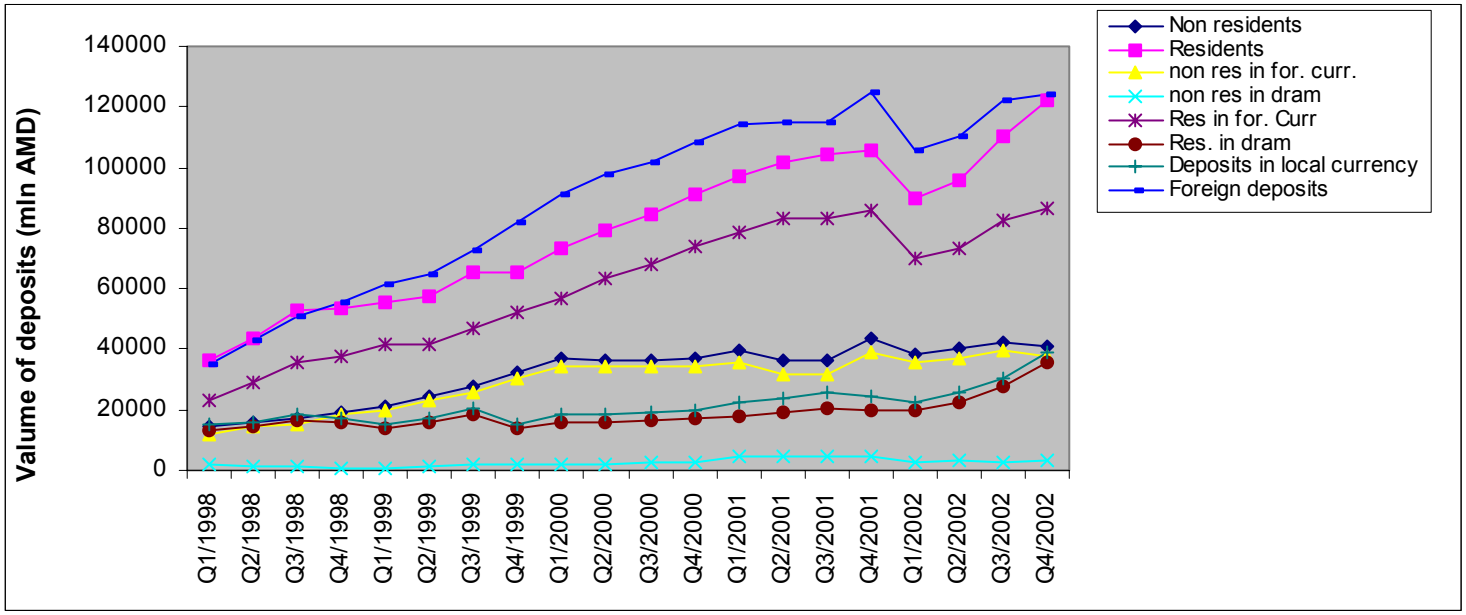
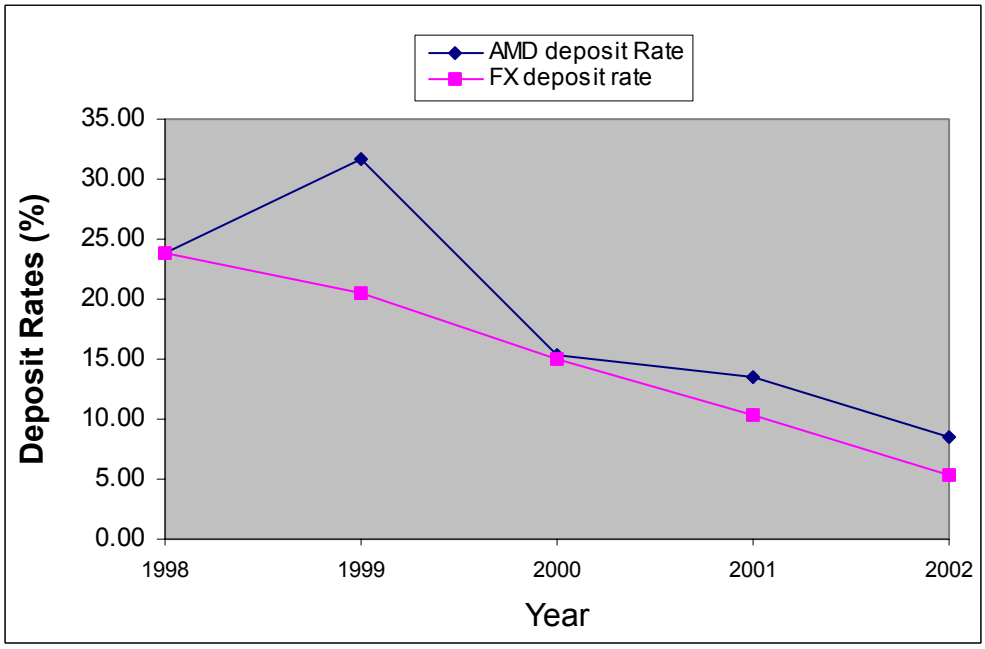


Figure 6. Deposit rates in RA 1998-2002



[24] Under CBA supervision that is why decreases.

Figure 7. Average rates for deposits and T-Bills in RA 1996-2002

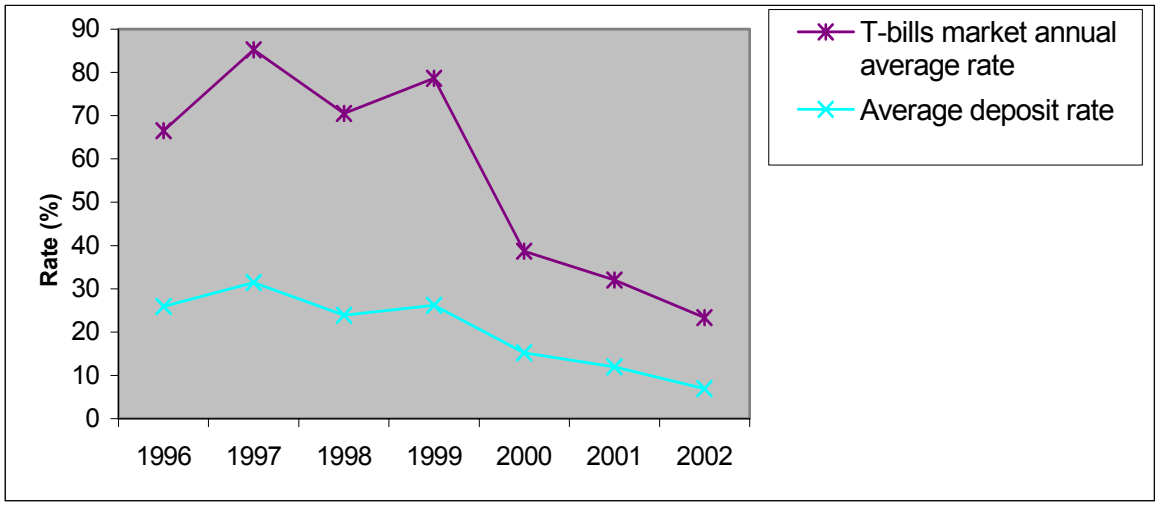


Figure 8. Monetization ratio in RA

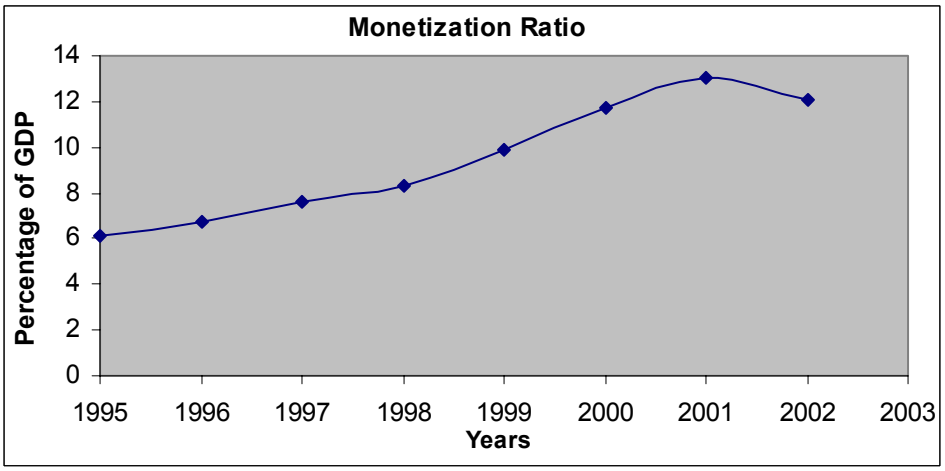


Figure 9. Share of agriculture in GDP of RA[25]

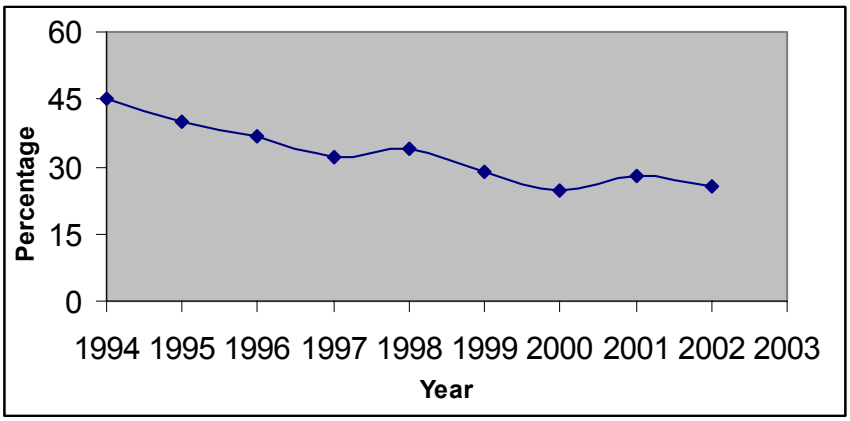
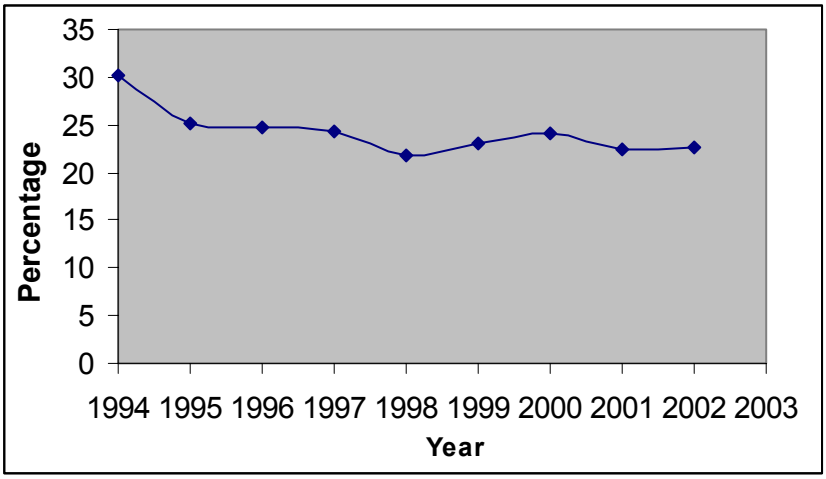


Figure 10. Share of industry in GDP of RA



[25] In current prices: according to National Statistical Service of The Republic of Armenia.

Figure 11. Volume of industrial production

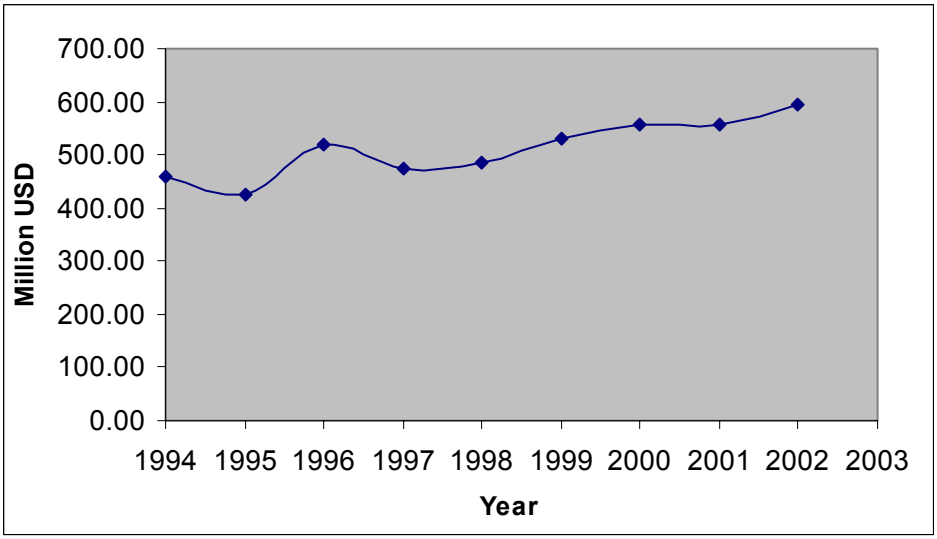


Figure 12.The net export of RA

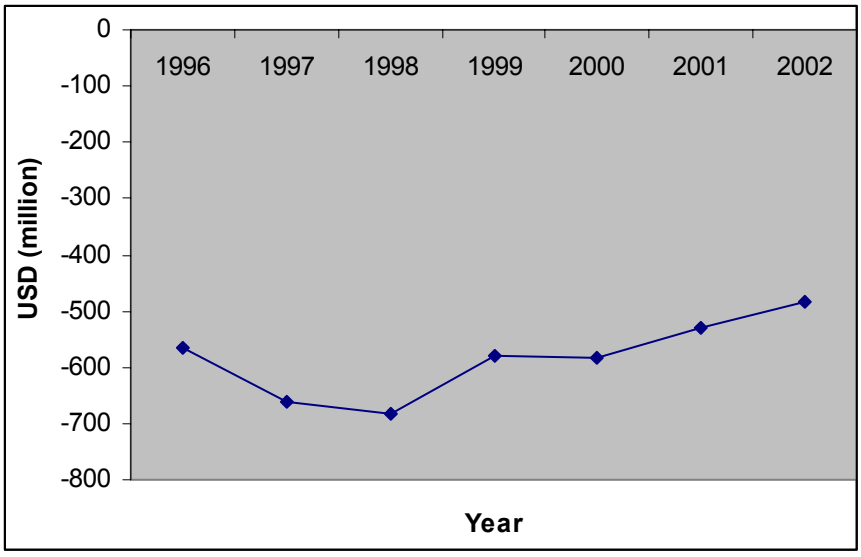


Figure 13 The trade balance of RA

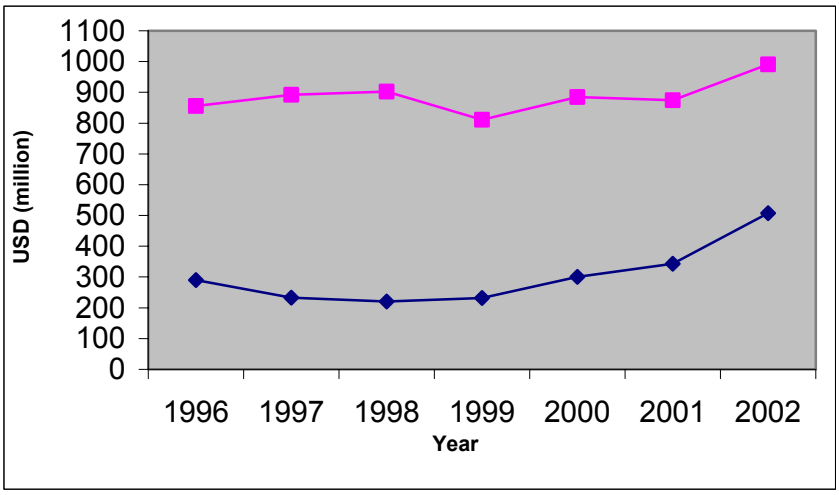


Table 1. GDP real growth index by real sector[26]

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
GDP	100	88.3	51.4	46.9	49.4	52.8	55.9	57.8	62.0	64.1	67.9	74.4
Industry	100	96.0	38.7	42.1	46.2	47.4	47.9	48.5	47.5	49.9	53.1	55.1
Agriculture	100	98.0	92.3	87.0	89.7	93.2	95.1	90.8	102.5	103.9	101.4	113.2
Construction	100	75.3	11.1	8.8	9.3	8.8	11.0	4.0	4.4	4.8	6.1	7.0
Transport & Communication	100	79.2	33.3	10.0	9.6	10.6	12.4	13.5	13.7	13.8	13.7	15.9
Trade	100	79.4	24.9	21.6	34.7	60.0	67.0	70.3	75.0	82.4	89.4	103.2

Table 2. The structure of gross agricultural output in 2002

Main agricultural products	***Share in gross agricultural output (%)***
Milk	16.82
Vegetables	13.68
Meat	12.67
Potatoes	11.00
Grain	10.41
Egg	4.95
Grape	4.48
Fruit	2.48
Melons	1.67

Table 3. Volume of industrial production by production sectors
(millions AMD)

	1997	*1998*	*1999*	*2000*	*2001*	*2002*
Total industry	*254315.6*	*261167.6*	*283484.8*	*300549.7*	*306714.2*	*339836.4*
Mining	*8926.1*	*10222.7*	*11037.5*	*16058.6*	*20222.6*	*30208.3*
Manufacturing	*177021.9*	*163580.8*	*181843.0*	*193821.8*	*198830.5*	*226632.5*
Production and distribution of electricity and water	*68367.6*	*87364.1*	*90604.3*	*90669.3*	*87661.1*	*82995.6*

[26] According to data Economic Development and Research Center *(www.eic.am).*

Table 4. Structure of industrial production by production sectors
(percent of total)

	1997	*1998*	*1999*	*2000*	*2001*	*2002*
Total industry	*100*	*100*	*100*	*100*	*100*	*100*
Mining	*3.5*	*3.9*	*3.9*	*5.3*	*6.6*	*8.9*
Manufacturing	*69.6*	*62.6*	*64.1*	*64.5*	*64.8*	*66.7*
Production and distribution of electricity and water	*26.9*	*33.5*	*32.0*	*30.2*	*28.6*	*24.4*

Table 5. Industrial capital assets by branches of industry
(millions AMD)

	1997	*1998*	*1999*	*2000*	*2001*
Total industry	*126225.5*	*1156250.4*	*1138158.8*	*1171341.0*	*1205412.0*
Electric power	*11626.1*	*1013867.8*	*981752.1*	*993998.9*	*996229.6*
Ferrous metallurgy	*227.8*	*243.9*	*366.4*	*371.5*	*281.7*
Non-ferrous metallurgy	*27278.5*	*3592.14*	*37456.9*	*38517.9*	*42681.8*
Chemical and petrochemical industry	*3728.8*	*4821.7*	*5029.8*	*8486.8*	*16669.4*
Machinery and metalworking	*35852.3*	*41523.0*	*40433.5*	*42082.6*	*42951.6*
Logging, wood-working, pulp and paper industry	*877.5*	*2338.1*	*2446.0*	*2983.1*	*2678.8*
Building materials industry	*7104.1*	*7248.8*	*10155.3*	*10095.6*	*10165.8*
Light industry	*7651.7*	*7395.2*	*8102.2*	*9735.9*	*8977.2*
Food industry	*23353.7*	*29554.2*	*37301.5*	*48103.1*	*62135.9*

Table 6. Structure of import by country

Percent of total	1997				1998				1999				2000				2001				2002			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Total Import	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Russia	15.1	23.7	30.4	26.1	24.4	15.1	13.6	29.6	21.4	17.4	18.8	16.8	19.0	12.2	15.1	15.9	20.8	16.0	19.0	23.6	21.37	19.47	18.17	19.82
CIS countries	33.5	30.3	38.2	32.4	29.6	19.2	18.2	33.1	26.6	22.6	23.4	20.5	23.3	17.5	18.7	19.1	24.6	21.5	24.7	29.2	31.67	29.52	28.62	30.85
Belgium	5.1	6.3	4.3	6.4	5.5	7.2	6.2	5.5	10.9	11.1	11.2	9.1	10.8	12.1	9.2	6.3	9.3	10.0	9.8	10.2	10.54	11.28	9.94	9.20
UK	1.7	1.2	0.7	1.1	4.3	5.4	11.4	9.1	9.2	10.3	6.7	7.2	4.1	5.6	8.6	8.3	11.4	8.4	8.4	8.8	2.22	2.67	2.88	2.85
USA	14.4	19.0	11.3	8.6	10.5	12.8	12.8	7.5	10.0	11.8	10.0	10.5	11.6	12.5	8.3	13.1	2.8	4.7	3.8	4.2	4.34	5.05	6.01	5.36
Iran	11.9	12.6	8.1	7.9	6.7	6.8	7.8	7.0	7.7	9.6	9.2	11.6	8.9	7.2	9.4	11.4	2.8	3.5	4.0	5.2	6.67	7.14	6.43	6.30
Other	33.5	30.6	37.4	43.7	43.4	48.7	43.7	37.8	35.5	34.5	39.5	41.1	41.3	45.0	45.8	41.7	49.2	52.0	49.3	42.5	44.56	44.34	46.12	45.44

Table 7. Structure of export by country

Percent of total	1997				1998				1999				2000				2001				2002			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Total Export	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Russia	28.2	22.9	30.6	26.7	21.3	24.1	14.2	11.7	13.3	15.8	13.1	16.3	9.6	13.6	18.8	16.5	16.8	18.1	17.8	21.0	13.08	11.52	13.08	19.82
CIS countries	36.0	31.9	42.2	47.9	49.8	39.4	29.8	25.3	26.8	23.1	19.8	27.3	24.9	20.6	26.0	26.8	33.3	27.2	22.1	26.9	21.08	18.31	19.16	30.85
Belgium	27.3	24.7	14.7	18.1	21.4	22.5	19.9	27.1	37.7	28.1	38.9	40.4	36.0	27.1	15.4	17.6	14.7	14.7	12.7	14.7	25.29	23.47	20.24	9.20
UK	0.9	14.4	0.3	0.6	0.4	2.5	8.0	4.0	3.8	4.1	4.7	3.7	4.3	3.1	3.0	3.3	4.0	5.3	5.3	9.6	6.06	8.19	9.03	2.85
USA	2.3	2.4	3.3	3.7	5.3	3.9	4.3	7.8	5.7	7.7	6.2	8.1	8.2	8.4	11.1	21.1	15.3	9.5	17.1	21.4	7.27	8.20	9.26	5.36
Iran	19.5	20.3	19.9	15.2	12.1	11.8	15.1	18.6	15.4	21.4	14.7	7.7	7.4	15.7	10.3	6.2	7.2	11.4	13.9	7.2	4.52	6.40	6.58	6.30
Other	14.1	6.4	19.6	14.5	11.0	19.8	22.9	17.1	10.5	15.6	15.7	12.7	19.2	25.0	34.2	25.1	25.5	31.8	28.9	20.2	35.78	35.43	35.73	45.44

Table 8. Export structure of RA by commodity

Million USD	1996	1997	1998 I	1998 II	1998 III	1998 IV	1999 I	1999 II	1999 III	1999 IV	2000 I	2000 II	2000 III	2000 IV	2001 I	2001 II	2001 III	2001 IV	2002 I	2002 II	2002 III	2002 IV
Total Export	**290.3**	**232.5**	**56.8**	**59.6**	**54.5**	**49.6**	**59.6**	**56.6**	**57.2**	**58.3**	**58.7**	**81.4**	**72.1**	**85.2**	**76.7**	**79.0**	**83.7**	**103.3**	**120.1**	**105.2**	**130.1**	**151.8**
Foodstuffs	11.8	24.6	5.0	6.9	2.1	2.8	3.0	4.1	3.3	5.6	4.6	5.4	6.2	11.2	10.5	11.7	12.2	13.6	15.0	9.5	17.0	17.8
Mineral products	19.1	17.9	4.4	7.5	9.4	9.5	10.4	10.7	9.3	7.6	6.8	10.3	7.9	9.2	10.0	9.2	12.1	7.1	10.9	10.7	12.1	8.3
Plastics and Rubbery materials	5.4	4.3	0.6	0.5	0.7	0.4	0.5	0.7	0.1	0.7	1.5	0.4	0.6	0.8	0.3	0.7	0.7	1.2	0.7	0.5	2.9	2.3
Textile Production	9.7	10.6	3.3	3.1	3.3	3.9	2.8	4.6	3.3	2.9	2.5	3.2	3.5	4.1	3.3	3.3	7.7	10.0	6.8	6.2	8.6	7.0
Precious Stones and Metals	140.3	55.2	12.1	13.4	12.9	14.7	25.6	19.7	28.3	26.2	29.6	34.6	27.8	29.4	29.4	25.8	25.3	42.4	68.2	53.9	58.4	78.6
Base Metals and goods from them	47.3	57.7	10.1	12.4	9.7	8.1	8.2	8.4	3.4	5.0	7.5	14.6	11.2	10.9	9.9	13.4	11.0	9.2	7.1	12.1	12.6	12.9
Machinery and Equipment	34.3	32.2	15.8	10.1	10.6	4.3	4.2	3.5	4.4	5.4	3.3	5.8	6.9	15.0	6.3	5.4	7.9	9.0	5.8	4.2	4.2	7.1
Other goods	22.4	30.0	5.7	5.8	5.7	5.8	4.9	4.9	5.1	5.2	2.9	7.1	8.0	4.6	7.2	9.5	6.8	10.9	5.6	8.1	14.3	17.8

Table 9. Structure of export of RA by commodity's share

Million USD			1998				1999				2000				2001				2002			
	1996	1997	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Total Export	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Foodstuffs	4.1	10.6	8.7	11.6	3.9	5.7	5.1	7.2	5.7	9.5	7.8	6.6	8.6	13.1	13.7	14.8	14.6	13.2	12.5	9.0	13.1	11.7
Mineral products	6.6	7.7	7.7	12.6	17.2	19.2	17.4	19.0	16.2	13.0	11.6	12.7	11.0	10.8	13.0	11.7	14.5	6.9	9.0	10.2	9.3	5.5
Plastics and Rubbery materials	1.9	1.9	1.0	0.9	1.3	0.7	0.8	1.2	0.2	1.1	2.6	0.5	0.8	0.9	0.3	0.9	0.8	1.1	0.6	0.5	2.2	1.5
Textile Production	3.4	4.5	5.8	5.1	6.1	7.9	4.7	8.1	5.8	4.9	4.2	3.9	4.9	4.8	4.2	4.2	9.3	9.7	5.6	5.9	6.6	4.6
Precious Stones and Metals	48.3	23.8	21.2	22.5	23.6	29.7	43.0	34.9	49.6	44.9	50.5	42.5	38.5	34.5	38.4	32.6	30.2	41.0	56.8	51.2	44.9	51.8
Base Metals and goods from them	16.3	24.8	17.8	20.8	17.8	16.4	13.8	14.8	6.0	8.5	12.7	17.9	15.6	12.8	12.8	16.9	13.1	8.9	5.8	11.5	9.7	8.5
Machinery and Equipment	11.8	13.8	27.8	16.9	19.5	8.7	7.0	6.2	7.8	9.2	5.7	7.2	9.5	17.6	8.2	6.8	9.4	8.7	4.8	4.0	3.22	4.7
Other goods	7.7	12.9	10.0	9.7	10.5	11.7	8.2	8.7	8.8	8.9	5.0	8.7	11.1	5.4	9.4	12.1	8.2	10.5	4.9	7.7	11.0	11.7

Table 10. Import structure of RA by commodity

Million USD	1996	1997	1998 I	1998 II	1998 III	1998 IV	1999 I	1999 II	1999 III	1999 IV	2000 I	2000 II	2000 III	2000 IV	2001 I	2001 II	2001 III	2001 IV	2002 I	2002 II	2002 III	2002 IV
Total Import	**855.8**	**892.3**	**203.9**	**211.7**	**214.1**	**272.6**	**180.6**	**189.3**	**200.8**	**240.6**	**201.3**	**235.3**	**196.4**	**252.2**	**178.8**	**216.5**	**222.4**	**256.7**	**204.4**	**202.6**	**267.3**	**316.7**
Products from animals	67.4	58.5	10.7	11.7	11.9	12.8	8.8	11.6	6.5	14.6	8.0	9.1	5.8	10.7	7.2	8.6	7.5	7.4	6.1	7.9	6.5	7.4
Products from plant cultivation	114.9	105.3	32.3	36.3	19.5	29.8	10.4	15.4	18.2	31.7	23.1	27.3	16.7	31.5	16.4	24.8	20.4	23.3	23.7	24.1	20.2	24.7
Foodstuffs	83.0	86.0	24.9	28.1	28.1	29.0	17.4	19.4	20.0	20.2	13.0	18.8	18.1	19.7	15.1	20.1	19.0	22.7	16.7	15.4	22.7	24.3
Mineral products	186.5	209.7	55.0	38.7	45.7	66.7	48.0	41.3	39.3	47.4	44.7	39.1	41.4	56.5	49.0	31.2	54.6	49.9	41.2	26.2	48.0	58.9
Plastics and Rubbery materials	56.2	85.2	13.9	19.6	22.0	18.2	15.4	19.7	20.3	16.0	17.2	25.4	17.8	22.1	10.7	19.1	14.9	20.4	17.9	19.8	25.6	22.0
Textile Production	21.0	33.6	6.2	7.6	9.1	8.9	6.5	8.7	8.0	6.8	5.3	10.3	6.2	10.1	6.6	10.1	10.4	9.1	6.2	9.8	10.6	9.0
Precious Stones and Metals	129.8	47.5	9.4	12.5	11.0	12.7	19.4	20.8	23.0	23.5	28.8	30.2	25.3	29.0	23.1	20.5	26.3	36.9	39.0	37.4	57.9	79.2
Base Metals and goods from them	10.2	24.6	4.8	4.4	5.9	5.1	5.2	7.1	6.8	4.8	4.0	5.4	7.7	7.3	5.5	9.7	9.8	11.1	9.6	12.8	11.1	22.2
Machinery and Equipment	80.5	102.1	16.2	15.2	15.6	31.9	17.2	14.5	19.5	35.3	26.9	35.6	25.7	28.9	16.0	23.3	18.9	30.2	20.9	22.5	28.4	31.7
Other goods	106.4	139.7	30.7	37.9	45.3	57.6	32.2	30.9	39.2	40.4	30.3	34.2	31.7	36.6	29.1	48.9	40.6	45.7	23.1	26.7	36.3	37.3

Table 11. Structure of import of RA by commodities share's

Million USD			1998				1999				2000				2001				2002			
	1996	1997	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Total Import	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Products from animals	7.9	6.6	5.2	5.5	5.5	4.7	4.9	6.1	3.2	6.1	4.0	3.9	3.0	4.2	4.1	4.0	3.4	2.9	3.0	3.9	2.4	2.3
Products from plant cultivation	13.4	11.8	15.8	17.1	9.1	10.9	5.8	8.1	9.1	13.2	11.5	11.6	8.5	12.5	9.2	11.5	9.2	9.1	11.6	11.9	7.5	7.8
Foodstuffs	9.7	9.6	12.2	13.2	13.1	10.6	9.6	10.2	10.0	8.4	6.4	8.0	9.2	7.8	8.5	9.3	8.5	8.8	8.2	7.6	8.5	7.7
Mineral products	21.8	23.5	27.0	18.3	21.4	24.5	26.6	21.8	19.6	19.7	22.2	16.6	21.1	22.4	27.4	14.4	24.6	19.4	20.1	12.9	18.0	18.6
Chemical production	6.6	9.5	6.8	9.3	10.3	6.7	8.5	10.4	10.1	6.6	8.5	10.8	9.0	8.8	6.0	8.8	6.7	8.0	8.7	9.8	9.6	6.9
Textile Production	2.5	3.8	3.0	3.6	4.2	3.3	3.6	4.6	4.0	2.8	2.6	4.4	3.2	4.0	3.7	4.7	4.7	3.5	3.0	4.8	4.0	2.8
Precious Stones and Metals	15.2	5.3	4.6	5.9	5.1	4.6	10.8	11.0	11.5	9.8	14.3	12.8	12.9	11.5	12.9	9.5	11.8	14.4	19.0	18.5	21.7	25.0
Base Metals and goods from them	1.2	2.8	2.3	2.1	2.7	1.9	2.9	3.7	3.4	2.0	2.0	2.3	3.9	2.9	3.1	4.5	4.4	4.3	4.7	6.3	4.1	7.0
Machinery and Equipment	9.4	11.4	7.9	7.2	7.3	11.7	9.5	7.6	9.7	14.7	13.4	15.1	13.1	11.5	8.9	10.8	8.5	11.8	10.2	11.1	10.6	10.0
Other goods	12.4	15.7	15.1	17.9	21.2	21.1	17.8	16.3	19.5	16.8	15.1	14.5	16.1	14.5	16.3	22.6	18.3	17.8	11.5	13.2	13.6	11.9

TABLE 12. Indicators of financial sector development and dollarization, 1997-2002
(millions AMD)

	1997	1998	1999	2000	2001	2002
Foreign exchange (FX) deposits	23.567	37.975	52.257	108.489	125.044	124.389
AMD deposits	9.084	16.167	13.678	19.513	24.673	39.254
Total deposits	**32.651**	**54.142**	**65.935**	**128.002**	**149.717**	**163.643**
Reserve money (RM)	50.550	53.839	53.853	72.390	80.369	111.273
Broad money (BM)	70.247	95.512	108.545	150.599	171.046	211.982

Indicators of confidence and financial sector development

	1997	1998	1999	2000	2001	2002
Money multiplier (=BM/RM)	1.39	1.77	2.02	2.08	2.13	1.95
Total deposits/Broad money	0.46	0.57	0.61	0.85	0.88	0.75

Indicators of dollarization

	1997	1998	1999	2000	2001	2002
FX deposits/Total deposits	0.72	0.70	0.79	0.85	0.84	0.76
FX deposits/Broad money	0.34	0.40	0.48	0.72	0.73	0.57

Source: Central Bank of Armenia and author's calculations

Table 13 Bank lending and household deposits (percent of GDP)[27]

Armenia	1997	1998	1999	2000
Lending	5.8	6.2	7.5	9.4
Household deposits	2.1	3.0	4.3	6.1
Azerbaijan				
Lending	13.5	13.7	14.3	N/A
Household deposits	N/A	N/A	N/A	N/A
Georgia				
Lending	3.7	4.7	5.8	6.6
Household deposits	1.0	0.8	1.2	1.8
Kyrgyzstan				
Lending	2.0	5.0	3.0	2.0
Household deposits	N/A	N/A	N/A	N/A
Moldova				
Lending	N/A	N/A	13.0	17.0
Household deposits	N/A	N/A	5.0	6.0

[27] See www.gov.am/undp/gipa/main.htm

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