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# Exchange Rate Regimes of the Dinar 1945–1990: An Assessment of Appropriateness and Efficiency

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## Abstract

The aim of this paper is to examine adequacy, efficiency and consequences of the foreign exchange policy of the dinar during the period after the Second World War up until 1990. During this period, the dinar was the national currency of the Second Yugoslavia (1945–1990/92). Also, this paper provides the answer to the question why the dinar during this 45-year period remained a weak and unconvertible currency.

The authorities of the Second Yugoslavia changed the exchange rate regimes of the dinar three times. The dinar was on a fixed regime from 1945 until 1973. Regime of managed floating was pursued between 1973 and 1989, when the fixed regime was again adopted as the nominal anchor of macroeconomic stabilization program. Convertibility of the dinar was officially declared as the aim of foreign and overall economic policy for the first time in 1965.

Analysis shows that applied regimes were appropriate in reference to the external and internal economic conditions at the time of their introduction. However, under all three regimes, the dinar remained an overvalued currency and multiple exchange rates prevailed. The exchange rate approached the real levels occasionally but just for the very brief periods of time – after devaluations (1945–1973), in 1983 and about the middle of 1990. Overvaluation and the system of multiple exchange rates were incompatible with the concept of currency convertibility.

Overvaluation of the dinar produced three main consequences: first, a permanent deficit of the current account of the balance of payments; second, a vicious cycle of mutually conditioned devaluation (depreciation) and inflation; third, money substitution.

Inefficiency of the foreign exchange policy is caused by the two groups of factors – direct and indirect (that are actually basic causes). The direct factors are: persistent structural imbalances of the economy, inflation (hyperinflation),

inconsistency in overall macroeconomic policy (particularly between monetary and foreign exchange policies), confused legal framework and political disintegration of the country. These direct factors, however, have their roots in the implementation of both import-substitution strategy and ideological concept of self-management socio-economic system. In these circumstances functioning of the market mechanism was highly suppressed. Thus, without market economy, true market concepts – foreign exchange rate and convertibility, did not have a chance to develop and exercise their functions fully.

Under prevailing ideological, political and economic circumstances, implemented exchange rate regimes did not contribute to the stabilization of the dinar – fixed regimes failed to impose monetary discipline and managed floating failed to impose monetary self-discipline. Ideological and legal frameworks were conducive to persistent monetary expansion (accommodative monetary policy) that directly led to the weakening of the dinar under both exchange rate regimes. That way, throughout the period, the dinar was moving further away from *de facto* convertibility. In 1990, *de iure* convertibility was used as an instrument of economic policy in the hope to strengthen the dinar but instead, it facilitated huge capital outflows which added to its further weakening.

The case of the Secocnd Yugoslavia again confirms the old truism – stable political environment is the basic precondition for the stability and convertibility of the national currency.

# 1. Introduction

The First Yugoslavia was the kingdom established after the First World War. The Second Yugoslavia was the socialist republic formed after the Second World War and lasted until the period 1990–1992. The dinar was the national currency of both states and was not convertible, except for the very short period in 1931 and in the first half of 1990.

The aim of this paper is to examine adequacy, efficiency and consequences of the foreign exchange policy of the Second Yugoslavia.

From 1945 to 1990, the exchange rate regime of the dinar was changed three times. At first, during the Bretton-Woods monetary system, the dinar was on a fixed regime until 1973. Managed floating regime was pursued between 1973 and 1989, when the fixed regime was again adopted as a nominal anchor of macroeconomic stabilization program.

The convertibility of the dinar was officially proclaimed for the first time in 1965 as the aim of foreign exchange policy, but actually it was implemented at a much later date – as an comprehensive economic program put in operation in December 1989.

The exchange rate represents a major macroeconomic price which influences the structure of foreign trade and consequently the structure of the economy itself.

To perform this allocating function appropriately, the exchange rate should be on a real level. Otherwise, unreal exchange rate tends to create external imbalance. Overvaluation creates a deficit and undervaluation a surplus in the current account of the balance of payments. If maintained for longer periods, the unreal exchange rate leads to inadequate structure and even autarky of the economy. Hence, the maintenance of the real exchange rate of a national currency is the essential criterion for assessing efficiency of a foreign exchange and overall national economic policy, especially in the long-run.

The very nature of an exchange rate is that it equates a general level of prices and not individual prices of goods and services in domestic and foreign countries. This means that there should be only one exchange rate for a national currency. The single national currency and the single general level of prices are consistent with the single exchange rate. In practice, however, countries apply multiple exchange rates by which different kinds of international transactions are carried on at different rates of exchange. Countries apply multiple rates to achieve certain aims of economic policy – most usually to adjust balance of payments but also to foster growth of chosen priority sectors, to diversify economy or to prevent external shocks to destabilize the real sector as in the case of volatile capital movements. Though these reasons may sound justifiable, monetary history shows that multiple rate system seldom operates effectively. It usually produces unfavorable consequences such as inflation, inadequate resource allocation, fiscal losses, evasion of repatriation of foreign exchange proceeds etc[1]. According to the Articles of Agreement of the International Monetary Fund (IMF), multiple currency practices are incompatible with convertibility of a currency as is stipulated in Article VIII, Section 3[2]. Although a multiple system of exchange rates is contradictory to the ideal exchange system contemplated by the Articles, the IMF has the authority to approve multiple currency practices but only on a temporary basis[3].

The application of the single exchange rate is taken as the second criterion for assessing efficiency of foreign exchange policy of the dinar.

Significance of the exchange rate is proportionate to the level of openness of the economy – the more open the economy, the more significant the exchange rate.

[1] Multiple rates have negative international implications as well. For example, during 1930s multiple rates were used particularly in Germany and Latin America and this led to retaliation by other countries. Widespread use of multiple rates then created general environment of exchange instability and disruption of smooth international economic and financial relations. (W. John R. Woodley, What Does It Really Mean? – Multiple Currency Practices, Finance and Development, June, 1964, p. 113.)

[2] Articles of Agreement of the International Monetary Fund, IMF, Washington D.C., 1978, p. 29.

[3] Joseph Gold, The Fund's Concept of Convertibility, International Monetary Fund, Washington D.C., 1971, Pamphlet Series, No. 14. p. 19.

Small economies are destined to higher openness and therefore the exchange rate for them is very important, if not the basic price. The economy of the Second Yugoslavia was small which means that the realization of the real and single exchange rate, especially in the long run, represented one of the main aims of overall economic policy. This analysis will show whether Yugoslav authorities recognized and achieved this aim.

## 2. Fixed Exchange Rate Policy of the Dinar 1945–1973

The Second Yugoslavia belongs to the group of original members of the IMF. Officially, it became the member on December 27, 1945.

As a member country, Yugoslavia adopted a policy of a fixed exchange rate for the dinar according to its obligation under the original Articles of Agreement of the IMF. Article IV, Section 1a, gave member countries choice to express par value of the currency "in terms of gold as a common denominator or in terms of the United States dollar of the weight and fineness in effect on July 1, 1944".4 The dinar parity was defined in gold by law. This was the basis of the exchange rate in terms of the U.S. dollar.

### 2.1 Gold Parities and Exchange Rates

The Yugoslav Finance Ministry determined the first parity of the dinar in gold by its Decision adopted on April 12, 1945. This decision set the temporary price of one kilogram of pure gold at 56.300 dinars. From that price came gold parity of 0.017762 grams for the dinar and exchange rate of 50.06 dinars per U.S. dollar.[5]

This first gold parity was determined without consultation with the IMF and was not registered at the IMF. In September 1946, the IMF notified original member countries to register parities of their currencies. By the end of 1946, 32 original member countries registered parities but seven countries, among them Yugoslavia, requested prolongation for registration which IMF allowed.[6]

Close political relations with the U.S.S.R., which assumed negative attitudes towards the IMF after the conference in Bretton Woods, were the main reasons why Yugoslavia did not continue its cooperation with the Fund up until 1949. That year, the conflict between the USSR and Yugoslavia broke out and Yugoslavia

[4] Ronald I. McKinnon, The Rules of the Game: International Money in Historical Perspective, Journal of Economic Literature, March 1993, Volume XXXI, Number 1, p. 15.

[5] M. Ugričić, Novčani sistem Jugoslavije, (*Monetary System of Yugoslavia*), Zavod za izdavanje udžbenika, Beograd, 1967, p. 145.

[6] M.G. de Vries, Twenty Years of Par Values, 1946–1966, Finance and Development, No. 4, 1966, p. 284.

turned back to normalize its relations with the Fund. Yugoslav authorities asked for registration of the gold dinar parity equivalent to 0,0177734 grams that Fund accepted on May 23, 1949.

With the approval of the Fund, Yugoslav authorities changed parity several times during the fixed regime. These changes are shown in table 1.

*Table 1: Gold Parities and Exchange Rates 1945–1973*

| *Date* | *Price of gold** | *Gold parity*** | *Exchange rate Din/USD* |
|---|---|---|---|
| 12.4. 45. | 56,300 | 0.017762 | 50.60 |
| 25.5. 49. | 56,263.80 | 0.0177734 | 50.00 |
| 1.1. 52. | 337,582.37 | 0.00296224 | 300.00 |
| 1954 | x | x | 632.00 |
| 1.1. 61. | 843,955.92 | 0.0011848 | 750.00 |
| 26.7. 65. | 1406594,78 | 0.00071094 | 1250.00 |
| 1.1. 66.** | 14,065.40 | 0.0710937 | 12.50 |
| 23.1. 71. | 16,879.14 | 0.0592447 | 15.00 |
| 31. 12. 71. | 20,769.38 | 0.0481478 | 17.00 |
| 22.2. 73. | 23,077.09 | 0.043333 | 17.00 |
| 31.12. 73. | Managed floating regime | | |

** In dinars. Price of gold stipulated by Law on dinar parity, officially published in Službeni list SFRJ – numbers: 2/1961; 33/1965; 4/1971; 58/1971; 51/1972 and 8/1973.*

*** In grams of gold.*

***After introduction of the new dinar: 100 old dinars = 1 new dinar.*

*Source: 1. International Financial Statistics – various numbers.*

*2. V. Pertot, Ekonomika valutnih tečajeva, (Economics of Foreign Exchange Rates), Zagreb, 1986, p. 358–361.*

Political ties with the U.S.S.R. until 1949 also influenced the choice of economic strategy in Yugoslavia. The Yugoslav authorities adopted the Soviet model of economic development and organization of economic activities that decisively determined the nature of foreign exchange policy and significance of exchange rates and all other prices. Yugoslavia adopted the soviet model of intensive industrialization by the development of iron metallurgy and heavy industry in the environment of centrally-planned economy and foreign trade state monopoly. This non-market economic model made all prices, including the foreign exchange, only accounting categories without real economic meaning. In theory, this strategy of

economic development is known as import-substitution strategy applied in various forms by many other developing countries too.

Yugoslavia, however, lacked necessary preconditions for development of iron and heavy industries – from raw materials, machinery to capital. Yet, conditions were artificially created by a myriad of economic policy instruments – from price controls to various export and import stimuli in favor of designated priority industries. In that way, autonomous internal price structure was created which was characterized by price disparities. Internal structure and level of prices did not correspond with international prices, too.

Unfortunately, internal and external price disparities, created at first for structural purposes and later reinforced by constantly expansionary monetary policy, remained a dominant characteristic of the Yugoslav economy until the end of its existence. Thus, price disparities remained as the main factor influencing the level of exchange rate and exchange rate policy.

In the beginning, differences between foreign and domestic prices were covered from specially created official fund – Equalization Foreign Trade Fund (EFTF). Since all differences in individual prices of imported and exported goods, calculated at official exchange rate, were covered from EFTF, in practice actually existed multiple system of exchange rates with practically as many rates as tradable goods and services.

The yearly average effective export and import rates for the period 1946–1951 are shown in table 2.

*Table 2: Yearly Average Effective Export and Import Exchange Rates 1946–1951 (in dinars per U.S. dollar)*

| *Year* | *Export exchange rate* | *Import exchange rate* |
|---|---|---|
| 1946 | 299 | 302 |
| 1947 | 320 | 310 |
| 1948 | 318 | 340 |
| 1949 | 328 | 318 |
| 1950 | 354 | 329 |
| 1951 | 354 | 326 |

*Source: F. Martinović, Devalvacije jugoslovenskog dinara, (Devaluations of Yugoslav Dinar), 1973, p. 17.*

Data from tables 1 and 2 show that there was a big difference between the official rate of 50 dinars per U.S. dollar, and effective export and import rates that were in the whole period above 300 dinars per U.S. dollar. This huge difference clearly demonstrates overvaluation of the dinar in those years.

A complex multiple rate structure with numerous different rates made the official rate, registered with the IMF, completely unoperative and fictitious.

Overvaluation, in the circumstances of import-substitution strategy, contributed to the appearance of current account deficit (table 8).

## 2.2 The First Devaluation 1952

The system of multiple rates can influence favorably or unfavorably the government budget but in some cases it can be neutral. When the level of effective import rates is higher than the level of effective export rates, the government collects profits. If the levels of effective export and import rates are similar, there is no effect on the budget.

Data from table 2 suggest that levels of effective export and import rates in Yugoslsavia were similar until 1951. Yet, Yugoslav authorities faced the problem of covering the deficit of EFTF. This deficit came as a result of the current account deficit. It was obvious that both deficits, current and of the EFTF, were primarily caused by overvaluation and price disparities so that measures to adjust deficits required to remove price misalignements.

Political cleavage with the U.S.S.R. during the late 1940s, led to changes in the opinion of Yugoslav political leadership towards market economy. As a result, political and economic turnabout happened in 1952 when the centrally-planned system was abandoned and a new economic system was introduced under the name of self-management system. The new economic system accepted limited internal and external liberalization of market mechanisms. In the sphere of international relations, state monopoly of foreign trade was abandoned and EFTF ceased to exist. Also, the first devaluation was carried out. The new gold parity of 0.00296224 grams was registered with the IMF on the basis of which the new rate of 300 dinars per U.S. dollar was determined.

The newly accepted exchange rate was below the effective rates shown in table 2. It was also below the rate of 450 dinars per U.S. dollar estimated at the end of 1950 as a real exchange rate[7]. Accepting this rate of 450 dinars per U.S. dollar meant that dinar had lost 8/9 of its value in less than three years. Yugoslav authorities were not willing to admit publically such huge level of devaluation in time of conflict with the U.S.S.R. This means that political, rather than economic, criterion was prevalent in determining the scope of the first devaluation.

At that time, it was not possible without economic disturbances of a large scale to correct quickly price disparities – abruptly raise the prices of agricultural products and decrease the prices of industrial products. For that reason, method of gradual removal of price disparities was chosen. Consequently, it meant gradual transition from complex system of multiple exchange rates to the single one.

[7] V. Pertot, Ekonomika valutnih tečajeva, (*Economics of Foreign Exchange Rates*), Informator Zagreb, 1986, p. 354.

The new multiple rate system took the form of coefficients. The official rate of 300 dinars per U.S. dollar was corrected with introduced export and import coefficients. The range of coefficietns was 0.5–4 which gave differential rates ranging from 120 to 1,200 dinars per U.S. dollar. Coefficients below 1 were granted to preferencial imports (raw materials and intermediate goods) and to non-preferencial exports (wheat). Coefficients around 1 were predominantly applied by other (than wheat) agricultural exports and by sectors which prices were on the international level (reckoned with the official rate). Exports and imports of industrial products which prices were higher than international ones, were granted various coefficients between 2 and 4 (2; 2.25; 2.35; 2.50; 3 and 4). Hence, new system of multiple rates in the form of coefficients, continued to give preferencial status to industry, especially processing industry. This means that new economic system did not change the old economic strategy based on import-substitution. Autarcky of the economy was also defended by sharp quantative import restrictions.[8]

*Table 3: Annual Average Effective Export and Import Exchange Rates 1952–1958 (in dinars per U.S. dollar)*

| Year | Export exchange rate | Import exchange rate |
|---|---|---|
| 1952 | 585 | 440 |
| 1953 | 650 | 501 |
| 1954 | 837 | 759 |
| 1956 | 858 | 719 |
| 1958 | --- | 802 |

*Source: See table 2.*

As it is seen from table 3, already at the end of the devaluation year (1952), effective rates were well above official rate of 300 dinars per U.S. dollar – particularly the export rate. At the end of 1953, average effective rate was about two times higher than the official rate. In the same year, however, free exchange rate on the exchange market was 2000 dinars that is about sevenfold the official one.

## 2.3 Limited Foreign Exchange Market and Unregistered Devaluation 1954

Process of gradual unification of differential rates was planned to be carried out through progressive reduction of export and import coefficients and with the

[8] O. Kovač, Spoljnoekonomska ravnoteža i privredni rast, (*External Balance and Economic Growth)*, Ekonomski fakultet, Beograd, 1985, p. 226.

functioning of the foreign exchange market. This market was oppened in 1952 under the peculiar name - Exchange Accounting Place (EAP). The EAP centers were located in capitals of the Yugoslav republics as foreign exchange markets with floating rates.

From the beginning, EAP centers were limited foreign exchange markets since the National Bank of Yugoslavia (NBY) still allocated foreign exchanges for the major imports. The supply of foreign exchange to the EAP centers came from retention quotas that at first were set at 40%. Later, retention quotas were changed in order to improve the functioning of the market.

Although the EAP was a very narrow and limited market, it is astonishing how precisely free floating rates reflected purchasing power of the dinar and international position of the Yugoslav economy. In October 1952, four months after the opening of the EAP, the average free floating rate was around 600 dinars per U.S. dollar. This rate was equivalent to the computed real rate that take the rate of 450 dinars as a real rate at the end of 1950 and inflation differentials between Yugoslavia and U.S.A. in 1951 and 1952.

When the free floating rate at the end of 1953 reached 2,000 dinars per U.S. dollar, authorities raised the retention quota to 50% at the beginning of 1954 in order to increase supply on the EAP market. However, this measure did not prevent the free rate from rising above 2,000 dinars.

After consultation with the IMF, Yugoslav authorities devalue dinar to the new rate of 632 dinars per U.S. dollar. This rate was not registered at the IMF but was applied in official transactions of the NBY. Thus, two official rates came into existence in this period – one registered at the IMF of 300 dinars and the other unregistered but operational rate of 632 dinars per U.S. dollar. The Unregistered rate was known as “single accounting exchange rate”.

The unregistered rate was corrected with the new export and import coefficients in the range of 0.8–2 that gave new range of exchange rates from 556 to 1264 dinars per U.S. dollar. In comparison to the previous ranging of 150–1,200, the new ranging of exchange rates actually devalued only the lowest rate from 150 to 556 dinars per U.S. dollar.

Contrary to the expectations, increased retention quota and unregistered devaluation with new range of multiple rates did not lead to equilibrium on the EAP market. Therefore further measures were taken at the end of 1954 – decrease of the retention quota to 15% and separation of the EAP market into two segments. On the one segment, so-called „circles“, the NBY offered certain quantities of foreign exchange for 80 major importers. The other segment continued to function with free floating rates that continued their upward trend and reached astronomical rates of 4,000 dinars per U.S. dollar. Such state of affairs with extremely high differences between official rates (300 and 632) and free floating rate unabled further functioning of the EAP market. Instead of removing structural imbalances that were at the core of the problem of smooth functioning of the foreign exchange

market, authorities abolished the EAP foreign exchange market in 1961 as part of exchange reform effected that year.

## 2.4 Exchange Reform and Second Unregistered Devaluation 1961

Economic reform in 1961 was suddenly undertaken and was focused on exchange measures. Apart from closing the EAP foreign exchange market, this reform abolished export and import coefficients, introduced new retention quota and effected another unregistered devaluation.

While old registered exchange rate remained at 300 dinars per U.S. dollar, the new second official rate was determined at 750 dinars per U.S. dollar (''single accounting exchange rate''). Estimates of that year showed that the real rate should be 850 dinars per U.S. dollar.[9] Official devaluation failed to establish a real rate this time because authorities maintained that any rate above 750 dinars would excessively raise cost of imports of raw materials and intermediate goods for industry. From this argument it is clear that processing industry was once again given priority over agriculture.

The IMF accepted once again unregistered devaluation on the ground that the abolishment of export and import coefficients was important step towards transition to a single exchange rate. From the same reason, the IMF allowed introduction of three export subsidies of 11%, 22% , 32% and tax reliefs for exporters. This way, four different export rates were actually put in effect – 750; 832,5; 915 and 950 dinars per U.S. dollar.

On the import side, import tariffs took the place of import coefficients. Import tariffs covered all imports providing total protection for domestic producers. The level of Yugoslav import tariffs at that time were among the highest in Europe.

In essence, the exchange reform of 1961 did not abolish the system of multiple rates. It only made transition from the system of explicit to the system of implicit multiple exchange rates.

The system of implicit rates also has different effective export and import rates that are reckoned by taking into account all instruments by which official rate is corrected. Export effective rate is calculated by adding all export subsidies, tax releifs and other export promotion measures to the official rate. Import effective rate is calculated by adding tariffs and other duties to the official rate.

The structure of implicite multiple rates between 1961 and 1965 is shown in table 4.

[9] V. Pertot, Ekonomika valutnih tečajeva, (*Economics of Foreign Exchange Rates*), op. cit., p. 359.

*Table 4: Official and Effective Export and Import Exchange Rates 1961–1965 (in Dinars per U.S. Dollar)*

| *Year* | *Official Exchange Rates* | | *Effective Exchange Rates* | |
|---|---|---|---|---|
| | *Registered* | *Accounting* | *Export* | *Import* |
| 1961 | 300 | 750 | 1,002 | 879 |
| 1962 | 300 | 750 | 1,023 | 912 |
| 1963 | 300 | 750 | 1,041 | 906 |
| 1964 | 300 | 750 | 1,050 | 953 |
| 1965 | 1,250 | - | 1,126 | 1,106 |

*Source: S. Obradović, Problemi platnog bilansa Jugoslavije, (Problems of the Yugoslav Balance of Payments), Savremena administracija, Beograd, 1972, p. 50.*

Data from table 4 show: first, that the level of export stimulation and protection of domestic producers were very high; second, that system of multiple rates favored exports more than imports; third, that dinar was overvalued throughout the period. The scope of overvaluation is indicated by export effective exchange rate as it is accepted in theory.

Multiple system of exchange rates produced several negative consequences. It had inflationary effect, distorted further domestic price structure and produced wrong signals for resource allocation. Based on export stimulation measures, new investments were undertaken, especially in the most favored import-dependant processing industries. These industries were developed in this period mostly thanks to the favorable official exchange rate.

## 2.5. Economic Reform and Devaluation 1965

The aim of economic reform undertaken in 1965 was very ambitious – to establish a completely new economic system that would lead to the convertibility of the Yugoslav currency. It was for the first time that convertibility was officially proclaimed as the final aim of economic policy.

Together with radical change of prices, general level of prices was increased and more consistent price structure was formed, devaluation of the dinar was legally effected by adopting new gold parity of 0.000710937 grams of pure gold per one dinar.[10] The new parity was registered at the IMF. On the basis of this parity, the NBY determined new exchange rate of 1250 dinars per U.S. dollar. In relation to previous registered exchange rate of 300 dinars per U.S. dollar, devaluation was very high – 317% but in relation to previous accounting rate of 750 dinars per U.S. dollar, devaluation was 66.6%.

[10] Zakon o paritetu dinara, (*Law on Dinar Parity*), Službeni list broj 33/1965.

It is generally accepted that this devaluation brought external value of the dinar to its real level. This devaluation would be remembered as the only one during the fixed rate regime that established the real exchange rate.

After the replacement of the old dinar by the new one, with the rate of 100 old dinars for the new dinar, official gold parity of 0,0710937 grams and exchange rate of 12,5 dinars per U.S. dollar, were again registered at the IMF on January 1, 1966.

By removing export subsidies and tax reliefs for exports, introduced in 1961, this reform opened the space for transition to single exchange rate. Exporters were granted only general retention quota of 7% that could be held in dinars in domestic banking system.

After the first year of implementation of the bold reform measures towards liberalization of the internal market, political enthusiasm slowly faded in recognizing that radical reforms of prices lead to restructuring of the economy which could produce great economic, social and political disturbances. The authorities resorted again to price controls in the form of relatively fixed prices of intermediate goods and free prices for processing industry products.

In combating the rising external deficit after 1966, severe import restrictions were used and again various export stimulation measures were introduced in the form of export subsidies, tax reliefs and differential retention quotas. With decentralization in economic management, decisions about tax reliefs were mandated to the local authorities which led to the extensive use of this policy instrument.

The new official funds were established for direct subsidization of exports, so-called "Self-management Interest Communities'' (SIC). These funds would continue to play a very important role during 1970s.

In this period authorities began for the first time to implement measures of indirect export stimulation through the preferential terms of loans extended to exporters.[11]

Extensive use of direct and indirect export stimulation measures resulted from the fact that export sector itself was highly dependent on imports as it was the case for the whole industrial sector.

Contrary to the intention of the 1965 reform to establish a real and a single exchange rate, numerous import and export measures again created the environment of multiple exchange rates that are shown in table 5.

[11] S. Obradović, Problemi platnog bilansa Jugoslavije, *(Problems of the Balance of Payments)*, Savremena administracija, Beograd, 1972, p. 161.

*Table 5: Official and Effective Export and Import Exchange Rates 1966–1970 (in dinars per U.S. dollar)*

| *Year* | *Official Exchange Rate* | *Effective Exchange Rates* | |
|---|---|---|---|
| | | *Export* | *Import* |
| 1966 | 12.5 | 13 | 13.75 |
| 1967 | 12.5 | 13 | 14 |
| 1968 | 12.5 | 13.25 | 14.37 |
| 1969 | 12.5 | 13.45 | 14.57 |
| 1970 | 12.5 | 13.74 | 14.87 |

*Source: See table 4.*

Between 1966 and 1970, the dinar was overvalued as in the previous period but at a much less degree mainly due to decreasing rates of inflation until 1970 (table 6).

## 2.6 Inflation and the Last Three Devaluations

Inflation in the Second Yugoslavia was generated by structural reasons and further was supported by expansionary monetary policy. Monetary expansion started during 1950s and continued in the 1960s.

In 1960–1965 period, yearly average inflation rate in Yugoslavia was 13.3%, in industrial countries 3.41% and in developing countries 8.03%. [12] At that time, only Brazil, Uruguay, Chile, Argentina and Korea had higher inflation than Yugoslavia. As it is already said, inflation surged in 1965 as a result of comprehensive price restructuring and liberalization after which a slowdown of prices appeared until 1970. In 1970, the inflation rate reached 10.9% and authorities responded by the introduction of the price freeze at the end of that year.

In a fixed exchange rate regime, higher domestic inflation than in foreign countries – main trading partners and the peg country, aggravate an external balance and lead to overvaluation. During the 1960–1970 decade, average inflation rate in Yugoslavia of 12.1% was much higher than in the the countries that were the main Yugoslav trading partners and in the U.S.A. as a peg country (table 7). As a result, Yugoslav current account deficit increased from 210 million U.S. dollars in 1960 to 899 million U.S. dollars in 1970.

[12] O. Kovač, op. cit., p.184.

*Table 6: Yearly Average Rate of Inflation in Yugoslavia 1960–1972 (in %)*

| | |
|---|---|
| 1960 | 9.7 |
| 1961 | 8.1 |
| 1962 | 10.3 |
| 1963 | 5.5 |
| 1964 | 11.6 |
| 1965 | 34.6 |
| 1966 | 22.8 |
| 1967 | 6.9 |
| 1968 | 5.0 |
| 1969 | 8.0 |
| 1970 | 10.6 |
| 1971 | 15.6 |
| 1972 | 16.6 |

*Source: Statistički bilten 803, (Statistical Bulletin), SZS, Beograd, September 1973.*

*Table 7: Yearly Average Inflation Rate in Yugoslavia and Selected Countries 1960–1970 (in %)*

| USA | Germany | Italy | Austria | Yugoslavia |
|---|---|---|---|---|
| 2.8 | 3.1 | 4.4 | 3.6 | 12.1 |

*Source: World Development Report, 1978, p. 76 and table 6.*

Inflation, overvaluation and an increased current account deficit at the end of 1970 required new devaluation.

At the beginning of 1971, authorities adopted the new gold parity of 0.0592447 grams of pure gold that determined the new exchange rate of 15 dinars per U.S. dollar.[13] This change in gold parity and exchange rate was registered at the IMF on January 23, 1971.

The new exchange rate, however, did not compensate fully the relative inflation in the period from the previous devaluation (1965) and after devaluation the dinar remained overvalued. Being aware of this fact, the authorities effected next devaluation at the end of 1971, on December 22, to the rate of 17 dinars per U.S. dollar that came from the new gold parity of 0.0481478 grams of pure gold.[14] The IMF registered this change on December 31, 1971.

[13] Zakon o paritetu dinara, *(Law on Dinar Parity*), Službeni list SFRJ broj 4, 1971.
[14] Zakon o paritetu dinara, *(Law on Dinar Parity),* Službeni list SFRJ broj 58, 1971.

In addition to domestic reasons, two major occurrences in the international monetary system influenced devaluation from December 1971 – alignments of exchange rates of the Group of Ten major industrial countries, agreed on December 18, 1971 in Washington Smithsonian Institute and the IMF decision about the introduction of temporary regime of central rates and wider margins.[15] In accordance with this decision, the NBY introduced wider margins of 2.25% around the new exchange rate.

According to purchasing power parity theory, the formula for calculating real exchange rate is:

$$Ri = Ro \frac{Pai}{Pbi}$$

*Ri = new exchange rate*
*Ro = exchange rate in the base period*
*Pai = domestic price index*
*Pbi = foreign price index*

Applying this formula for 1971, when Yugoslav inflation rate was 15.6%, American inflation rate 4.3% and exchange rate 15 dinars per U.S. dollar, the new real rate is calculated at 16.55 dinars which was very close to the chosen official rate of 17 dinars per U.S. dollar. This calculation shows that devaluation covered relative inflation in 1971 but the new rate can not be taken as the real one since the rate of 15 dinars taken in the formula was overvalued. Thus, after this devaluation, dinar again remained overvalued.

The last change of gold parity in the fixed regime occured on February 1973, when new dinar parity of 0.043333 grams of pure gold was registered at the IMF.[16] However, exchange rate in terms of U.S. dollar remained 17 dinars. Thus, there was only a devaluation of 10% in terms of gold. Since inflation in Yugoslavia in 1973 was 16.6% and in USA only 3.3%, without changing the exchage rate in terms of U.S. dollars, the dinar stayed in the overvaluation area.

## 2.7 Efficiency of the Fixed Exchange Rate Regime 1945–1973

Analysis shows that in the whole 1945–1973 period, the Yugoslav dinar remained an overvalued currency. Also, under the surface of a fixed regime, multiple exchange rates prevailed – at first in the form of explicite and later implicite rates.

[15] Central Rates and Wider Margins: A Temporary Regime?, Executive Board Decission No. 3463–(71/126) adopted December 18, 1971.
[16] Uredba o paritetu dinara, *(Decree on Dinar Parity*), Službeni list SFRJ, broj 8, 1973.

Failing to apply real and single exchange rates, authorities fail to fulfill basic preconditions for achieving convertibility that was declaired as the aim of national economic policy in 1965. In this regard, it can be said that overall economic policy, not just foreign exchange policy, was not efficient.

There were two main factors that unabled the realization of real and single exchange rate – persistence of structural imbalances that were supported by price disparities and continued inflation that was generated by structural reasons and than suppported by expansionary monetary policy. At the beginning, the main structural imbalance was between agriculture and base (iron and heavy) industry and later between primary and processing industries.

Continuous overvaluation caused a persistent current account deficit as it is shown in table 8. Current deficits were, on their part, exerting further pressures on the exchange rate. With the approval of the IMF, authorities carried out several devaluations that were very high in comparison to other countries during the Bretton Woods monetary system.[17] Instead of improving the current account, devaluations, this policiy led to inflationary effects in an environment of monetary expansion and a high level of protection. In this way, a vicious circle of inflation and devaluation was created.

Structural imbalances and monetary expansion, actually resulted from import-substitution development strategy chosen immediately after the Second World War. It was recognized that the only way to correct imbalances was to change this strategy. But, this was not done. Lack of political will and courage to face this demanding process of restructuring postponed it for the later date. That way, Yugoslavia entered the period of flexible exchange rate regime with unchanged economic strategy and the main structural imbalance between primary and processing industries.

[17] Within twenty years after 1949, very few adjustments in exchange par values occurred and all were very modest. In Japan, par value of the yen remained unchanged at 360 yen/U.S. dollar from 1949 to 1971. (Ronald I. McKinnon, op.cit.).

*Table 8: Current Account of the Balance of Payments SFRY 1946–1973 (in million USD)*

| Year | Merchandise | Services | Income | Current Account |
|---|---|---|---|---|
| 1946 | -210 | -1.4 | - | -211 |
| 1947 | -106 | -2.9 | - | -109 |
| 1948 | -56 | -2.3 | - | -58 |
| 1949 | -14 | 7.3 | -2.5 | -135 |
| 1950 | -111 | 7.5 | -2.6 | -106 |
| 1951 | -249 | 15.7 | -5.3 | -239 |
| 1952 | -144 | 16.7 | -5.5 | -133 |
| 1953 | -229 | 10.4 | -9.4 | -230 |
| 1954 | -121 | 18.0 | -8.7 | -112 |
| 1955 | -205 | 34.9 | -7.6 | -179 |
| 1956 | -166 | 51.4 | -7.6 | -122 |
| 1957 | -273 | 65.4 | -5.9 | -213 |
| 1958 | -236 | 60.6 | -8.2 | -184 |
| 1959 | -217 | 58.0 | -10.3 | -169 |
| 1960 | -269 | 70.0 | -10.8 | -210 |
| 1961 | -346 | 79.3 | -17.0 | -284 |
| 1962 | -199 | 103.0 | -21.0 | -117 |
| 1963 | -278 | 168.0 | -34.0 | -144 |
| 1964 | -435 | 211.0 | -48.0 | -272 |
| 1965 | -200 | 245.0 | -60.0 | -15 |
| 1966 | -351 | 244 | -70 | -177 |
| 1967 | -454 | 281 | -74 | -247 |
| 1968 | -533 | 315 | -80 | -298 |
| 1969 | -659 | 400 | -90 | -349 |
| 1970 | -1195 | 415 | -119 | -899 |
| 1971 | -1163 | 811 | -138 | -490 |
| 1972 | -613 | 965 | -131 | 221 |
| 1973 | -904 | 1220 | -127 | 189 |

** Non-monetary gold included.*

*Source: Balance of Payments Statistics Yearbook – various numbers.*

# 3. Managed Floating Regime 1973–1989

Implementation of the managed floating regime began on July 12, 1973. Various external and internal factors influenced introduction of the managed floating regime.

## 3.1 Conditions for Floating

The main external factor of adopting managed floating for the dinar was the fundamental disturbance of the international monetary system that was fueled in 1971 by suspension of the gold-bullion convertibility of the dollar and progressed later by adoption of flexible exchange rates by the U.S.A. and other industrial countries. Currencies of foreign countries in which Yugoslav export proceeds and foreign obligations were denominated, fluctuated widely on foreign exchange markets. The only way to avoid these unwanted fluctuations of the dinar, was to leave any pegs and find suitable more flexible regime.

Failure to establish real exchange rate through several devaluations during the fixed regime and acceleration of inflation in 1972–1973, were internal factors in favor of flexibility. As in many cases in previous history, flexible rate was adopted in Yugoslavia as an instrument to find the real level of the exchange rate.

Hence, in prevailing external and internal circumstances, the adoption of the flexible regime for the dinar seemed rather adequate. The IMF classified the dinar in the group of currencies with managed floating – an arrangement that requires permanent surveillance over the level of the exchange rate.[18]

With the adoption of managed floating, the obligation to fix the value of the dinar in terms of gold ceased to exist. In October 1972, the new Law on Foreign Exchange stipulated that the dinar parity in the future would not be expressed in gold and it gave the mandate to the Federal government to take all the necessary measures to maintain the real exchange rate.[19] According to the Law, the exchange rate is formed on the foreign exchange market within the limits determined by the Federal Government and the NBY. The foreign exchange market was opened on May 7, 1973 and started to work on a regular basis on July 12, when the dinar officially was put on managed floating.

## 3.2 Foreign Exchange Market

The excluding temporary experiment with the EAP market during the 1950s, the opening of the foreign exchange market in 1973 meant the introduction of a

[18] IMF Annual Report 1975, p. 46.

[19] Article 15, Zakon o deviznom poslovanju (*Law on Foreign Exchange Business*), Službeni list SFRJ, No. 36, July 13, 1972.

completely new organizational method of dealing with foreign exchange. Until that time, there was a system of foreign exchange rationing with compulsory surrendering of foreign exchange proceeds to the NBY. Since the time of the opening of the EAP market, exporters were given retention quotas which had been changing over time. From 1972, retention quota increased from 7% to 20%.[20]

The Law on Foreign Exchange stipulated organization, membership and other basic aspects of the foreign exchange market. The market was defined as an interbank market. The members were the NBY and "authorized banks" – those with a license to conduct international payments. In the beginning there were 21 authorized banks.

In operational terms, the foreign exchange market was structured in three segments – principal market called "Interbank Session'' (held twice a week as a meeting of the NBY and authorized banks), authorized banks' market (everyday dealings among authorized banks) and over-the-counter market (everyday selling and buying between authorized banks and their customers). The exchange rate formed in free dealings on the Interbank session was an obligatory rate for all transactions on the second and third segments of the market.

From 1975, authorized banks were allowed to buy and sell foreign exchange abroad.[21] Introduction of the international arbitrage transactions facilitated: first, maintenance of cross-rates on the Yugoslav market (the structure of rates that corresponds to that on international markets) and second, the NBY's intervention only in one foreign currency. However, in 1977 the NBY started to intervene in two currencies – U.S. dollar and Deutsche mark.

By the Law on Foreign Exchange, the Federal Government had the right to set basic elements of foreign exchange policy – central rate, margins and their change. In its intervention, the NBY respected guidelines set by the Federal Government which means that the NBY was not independent in its operations. It was stipulated that the Federal Government could change central rate if the market rate had tendency to break margins. The first central rate was set at 16 dinars per U.S. dollar and the first margins at 5% around the central rate.[22]

Already in November 1973, four months after the opening of the market, the exchange rate broke the margins but the Federal Government abstained from devaluation and postponed it for another 12 months. In October 1974, depreciation of 7% was effected. The IMF was notified that the current account worsening required this depreciation.[23] Instead of 200 million U.S. dollars, as it was set in the

[20] Godišnji izveštaj NBJ 1972, *Annual Report NBY 1972* p. 62.
[21] N. Živanović, Politika i kretanje kursa dinara, *Policy and Exchange Rate Performance*, Bilten NBY, 2, 1972, p. 24.
[22] L. Jančić and V. Seljak, Devizno tržište i njegov razvoj, (*Exchange Market and Its Development*), Bilten NBJ, No. 1, 1974, p. 32.
[23] IMF Annual Report 1975, p. 46 and 65.

"1971–1975 Social Plan of Development", the current account deficit reached one billion dollars in 1974.[24] Also, projected figures for inflation failed. In 1974, inflation rate was around 30% that was much above the rate of 5% targeted in the Social Plan.[25] From that year till the end of the period of managed floating, very high inflation was the main cause of dinar depreciation.

As the mandate for the exchange rate was in the hands of the Federal Government, the Government was also responsible for maintaining efficient functioning of the foreign exchange market, i.e. stability of the market rates. The only way to accomplish this efficiency was to achieve macroeconomic stabilization and to start necessary structural adjustments (to correct inherited imbalances from the earlier times). Unfortunately, the Yugoslav Government did not succeed to implement such a policy in the period of managed floating. As a result, the dinar constantly depreciated with accelerating rates of depreciation which prevented smooth functioning of the foreign exchange market. Gradually, the market was loosing importance and finally completely lost its significance during the 1980s. It is visible in quantitative terms from the total turnover on the market (table 9).

*Table 9: Turnover of the Foreign Exchange Market 1973–1982 (in million U.S. dollars)*

| Year | Interbank Session | Authorized Banks | Total Turnover |
|---|---|---|---|
| 1973 | 1,113,325 | 235,326 | 1,348,651 |
| 1974 | 2,377,975 | 647,997 | 3,025,972 |
| 1975 | 2,402,541 | 644,995 | 3,047,536 |
| 1976 | 2,397,283 | 649,560 | 3,046,843 |
| 1977 | 1,999,277 | 885,122 | 2,884,399 |
| 1978 | 2,063,743 | 722,519 | 2,786,262 |
| 1979 | 2,998,191 | 840,716 | 3,838,907 |
| 1980 | 1,068,415 | 412,686 | 1,481,101 |
| 1981 | 1,945,441 | 398,063 | 2,343,504 |
| 1982 | 2,234,361 | 123,535 | 2,257,896 |
| | 20,500,552 | 5,560,519 | 26,061,071 |

*Source: I.Tasić, Deset godina rada deviznog tržišta (Ten Years of Foreign Exchange Market) „Jugoslovensko bankarstvo 6/1983, p. 74.*

[24] V. Pejovski, Društveni plan razvoja Jugoslavije za period 1971–1975, (*Social plan of Development of Yugoslavia for 1971–1975 Period*) Jugoslovenski pregled, br. 11, 1971, p.9

[25] Inflation measured by wholesale index published in: International Financial Statistics Yearbook, 1991, p. 114.

In the period of managed floating, another factor came into the scene that added to the inefficiency of foreign exchange market. This was the confusion of the legal framework created by the new Constitution adopted in 1974. On its basis, many new laws were adopted among which the Associated Labor Act (ALA) in 1976 that was crucial for the functioning of the economy.

## 3.3 Confusion of the Legal Framework 1974–1977

The new Constitution and the Associated Labor Act (ALA) established a new economic system based on the idea of rational integration of market and planning in the environment of social ownership. The most important mechanism of this new system was the economic planning on every level – from the basic economic units (named Basic Organization of Associated Labor – BOAL) to the Federal Government by means of "self management consultations" and "social agreements" that were supposed to simulate market and planning.[26] On these very principles, the new Law on Foreign Exchange, adopted in 1977, stipulated regulations in the field of international transactions.[27]

The new Law on Foreign Exchange, brought into the Yugoslav economic system two parallel foreign exchange mechanisms – foreign exchange market, on the one hand and "self-management agreements" (and "social compacts") on the other. In essence, this second mechanism represented planning of redistribution of the foreign exchange through specially created bodies called – Selfmanagement Interest Associations for International Economic Relations (SIAIER). These official bodies were created on the level of republics and autonomous provinces. Legally, foreign exchange proceeds were owned by workers (in BOAL) as their social ownership. They had no legal obligation whatsoever to sell foreign exchange on the official foreign exchange market. In practice, this legal framework led to increasing power of the authorized banks in foreign exchange dealings. In circumstances of growing shortage of foreign exchange, owing to the widening current account deficits, every authorized bank gradually became an individual foreign exchange market itself. That way, functioning of the single official foreign exchange market was disrupted and an illegal market came into existence consisting of numerous small, closed black markets. Again, multiple exchange rates appeared but this time, not as a government policy, but as the illegal rates which spread throughout the economy.

As the total supply of foreign exchange was not concentrated on the official market, foreign exchange rate formed at Interbank sessions was not determined by

[26] B. Srebrić, Devizni sistem 1974 – 1990, (*Foreign Exchange System 1974–1990)*, Jugoslovenski pregled, No. 3–4, 1990, p. 60.

[27] The full name of this law was: Law on Foreign Exchange Business and Foreign Credit Relations.

supply and demand forces but mostly by decisions of the Federal Government. Thus, the exchange rate of the dinar became non-market rate despite the existence of the foreign exchange market.

In the field of foreign borrowings, the Law on foreign exchange allowed a high degree of decentralization. Liberalized legal terms for borrowing abroad during high investment 1976–1980 period, resulted in sudden increase of national debt – from eight billion U.S. dollars in 1976 to 20 billion U.S. dollars in 1982. As a result, debt servicing started to exert rising pressure on the exchange rate.

The new legal framework adopted with the new Constitution (1974), not only prevented the foreign exchange market from normal functioning, but also transferred economic power from the Federal government and bodies to the lower levels – to the governments of the republics and autonomous provinces. The excessive economic decentralization slowly disrupted total internal Yugoslav market from functioning as one single market.

## 3.4 Exchange Rates and the Balance of Payments 1973–1989

It was expected that the managed floating regime would decrease the current deficit by finding the real level of the exchange rate. But, expectations were not fulfilled. Despite permanent depreciation, current deficits persisted and even increased (table 10).

In contrast to the NBY methodology used at that time, table 10 is constructed without unilateral transfers in order to stress the real magnitude of the deficit. Unilateral transfers were treated here as a method of financing the current account deficit.[28] In Yugoslav case, workers remittances were a predominant form of unilateral transfers not only in this period but until 1990.

[28] M. Ćirović, Teorija uravnoteženja platnog bilansa, (*The Theory of Equlibrating Balance of Payments),* Savremena administracija, Beograd, 1980, p. 13.

*Table 10: Current Account and Exchange Rate 1973–1989 (in mill. U.S. dollars)*

| Year | Merchandise | Services | Income | Current Account | Exchange rate* |
|---|---|---|---|---|---|
| 1973 | -904 | 1220 | -127 | 189 | 16.242 |
| 1974 | -2156 | 1278 | -132 | -1010 | 15.913 |
| 1975 | -2027 | 1356 | -186 | -857 | 17.344 |
| 1976 | -1398 | 103 | -209 | -1504 | 18.178 |
| 1977 | -2778 | -66 | -202 | -3046 | 18.298 |
| 1978 | -2401 | -289 | -206 | -2896 | 18.637 |
| 1979 | -3631 | -407 | -380 | -4418 | 18.973 |
| 1980 | -2855 | -396 | -640 | -3891 | 24.639 |
| 1981 | -2276 | -268 | -1184 | -3728 | 34.966 |
| 1982 | -1661 | -866 | -1485 | -4012 | 50.276 |
| 1983 | -1078 | -537 | -1340 | -2958 | 92.839 |
| 1984 | -751 | -429 | -1543 | -2723 | 152.822 |
| 1985 | -572 | -189 | -1613 | -2374 | 270.163 |
| 1986 | -510 | -274 | -1270 | -2054 | 379.222 |
| 1987 | 50 | -1861 | ... | -1811 | 736.998 |
| 1988 | 779 | -1264 | -1797 | -2382 | 2522.59 |
| 1989 | 58 | -2804 | -1469 | -4215 | 2876.00 |

**Yearly average exchange rate - "rf" series from International Financial Statistics Yearbook, various years.*

*Source: Balance of Payments Statistics Yearbook, various years.*

During managed floating, Yugoslavia continued with relatively high degree of trade and exchange restrictions which means that potential current account deficits would be much higher than those shown in table 10.

The highest deficit took place in 1979 – about 4.5 billion U.S. dollars. Unilateral transfers financed 50% of this deficit. The other half was covered by foreign credits in the amount of 1.35 billion and by decrease in reserves of 0.7 billion U.S. dollars.[29] This deficit accounted for 8% of the total deficit of the oil-importing developing countries that year.[30]

Explosion of the current account deficit in 1979, brought Yugoslavia to the IMF. In the coming years, successive stand-by arrangements were concluded with

[29] B. Stojanović, Međunarodni monetarni fond i Jugoslavija, (*International Monetay Fund and Yugoslavia)*, Ekonomski institut, Beograd, 1991, table 21, p. 116–117.

[30] Calculated with reference to: M.G. de Vries, Balance of Payments Adjustments, IMF, Washington, D.C., 1987, p. 168

the aim to stabilize economy and start structural adjustments.[31] However, all these arrangements failed and in 1989, the second largest current account deficit of 4.2 billion U.S. dollars burst.

Current deficits and slowdown in exports caused severe problems in functioning of the foreign exchange market (table 9). In 1980 and 1981, high misbalance between supply and demand appeared. Supply of foreign exchange from the authorized banks decreased enormously from 1979 and almost disappeared in 1982. It was compensated by the NBY intervention that continued to be the main source of supply for the Interbank Session market.

The pace of the dinar depreciation gradually accelerated, especially in the beginning of 1983. This initiated process of currency substitution in internal transactions – dinar was loosing money functions and was substituting with foreign currencies in internal transactions. Instead of going towards stability and convertibility, the dinar took the opposite direction.

## 3.5 Nominal and Real Effective Exchange Rates

In a system of flexible rates, the exchange rate of a national currency fluctuates differently in terms of different foreign currencies. It can simultaneously increase in terms of one group and fall in terms of the other group of foreign currencies. Understanding movements of a flexible exchange rate is possible by applying methodology of the nominal and real effective rates that show the average change in terms of the selected group of foreign currencies. Nominal and real effective rates are expressed in an index form.

The nominal effective rate is an index that shows average nominal change. To see if this change leads to the real level of exchange rate, the index of the nominal effective rate is deflated by the index of relative inflation and thus the index of the real exchange rate is derived. If the nominal change fully compensates relative inflation, the value of the real effective rate will be 100%. Thus, the real effective exchange rate of the dinar is the index of the nominal effective rate of the dinar deflated by the index of relative inflation in Yugoslavia and selected countries.

Indices of nominal and real effective rates of the dinar are calculated in this analysis on the basis of several methodological assumptions and criteria.

Theory suggests that the base period should be one in which the equilibrium of the balance of payments is achieved. According to this, 1971 was chosen as a base year.

[31] Cooperation of Yugoslavia with IMF from 1945–88 in the book: B.Stojanović, Međunarodni monetarni fond i Jugoslavija, (*International Monetay Fund and Yugoslavia)*, Ekonomski institut, Beograd, 1991.

Nominal rates are calculated in terms of a basket of seven currencies. This basket was used by the NBY from 1984. Bilateral rates are taken from the published official quotation list from Interbank sessions without taking into account export stimulations as they were not available (table 11).

*Table 11: Exchange Rates 1971–1989 (in dinars end of year)**

| Year | USD (1) | DEM (100) | ITL (100) | ATS (100) | CHF (100) | FRF (100) | GBR (1) |
|---|---|---|---|---|---|---|---|
| 1971 | 17.0 | 527.54 | 2.92 | 70.00 | 442.71 | 332.31 | 44.30 |
| 1972 | 16.75 | 525.00 | 2.85 | 72.50 | 440.50 | 332.00 | 39.00 |
| 1973 | 15.60 | 590.35 | 2.49 | 80.37 | 490.31 | 340.04 | 36.36 |
| 1974 | 17.05 | 689.34 | 2.57 | 95.74 | 649.33 | 374.45 | 39.65 |
| 1975 | 18.00 | 695.43 | 2.65 | 97.84 | 688.06 | 406.98 | 36.84 |
| 1976 | 18.31 | 767.53 | 2.09 | 107.73 | 747.08 | 367.15 | 30.88 |
| 1977 | 18.45 | 858.45 | 2.09 | 119.15 | 897.35 | 384.70 | 34.38 |
| 1978 | 18.61 | 987.96 | 2.23 | 137.21 | 1107.24 | 435.72 | 37.33 |
| 1979 | 19.16 | 1117.07 | 2.38 | 155.39 | 1213.23 | 477.43 | 42.99 |
| 1980 | 29.30 | 1512.00 | 3.20 | 213.75 | 1681.03 | 654.58 | 69.67 |
| 1981 | 41.82 | 1840.87 | 3.46 | 263.10 | 2312.81 | 727.17 | 79.12 |
| 1982 | 62.48 | 2625.62 | 4.56 | 372.98 | 3115.08 | 927.30 | 101.10 |
| 1983 | 125.67 | 4578.49 | 7.54 | 649.10 | 5754.97 | 1494.61 | 180.48 |
| 1984 | 211.75 | 6776.53 | 11.02 | 964.19 | 8231.65 | 2214.90 | 247.80 |
| 1985 | 312.80 | 12838.02 | 18.16 | 1820.22 | 15127.32 | 4174.90 | 454.04 |
| 1986 | 457.18 | 23444.99 | 33.65 | 3335.60 | 28013.32 | 7093.96 | 670.45 |
| 1987 | 1244.35 | 78045.16 | 105.86 | 11075.58 | 96535.44 | 23032.70 | 2315.72 |
| 1988 | 5210.76 | 291029.12 | 395.89 | 41375.64 | 343454.69 | 85258.90 | 9350.89 |
| 1989 | 118160 | 7000000 | 9341 | 988961 | 7678685 | 2046060 | 189765 |

** Direct notation of exchange rate: number of dinars per unit of a foreign currency.*

*Source:* *1. 1971–1975: Bilten NBJ, (Bulletin NBY), number 1, 1981.*
*2. 1976–1984: Bilten NBJ, (Bulletin NBY), number 1, 1985.*
*3. 1985–1989: Bilten NBJ, (Bulletin NBY ), number 11–12, 1989.*

Weights for calculating effective rates and relative inflation were given by the NBY. The structure of these weights is shown in table 12.

*Table 12: Weights for Calculating Effective Exchange Rate Indices (in %)*

| USD | DEM | ITL | ATS | CHF | FRF | GBP | Total |
|---|---|---|---|---|---|---|---|
| 0.43 | 0.30 | 0.09 | 0.06 | 0.05 | 0.04 | 0.03 | 1 |

*Source: National Bank of Yugoslavia.*

It is possible to use various indices for deflating nominal exchange rate. In a country with price controls it is very difficult to discern what index really reflects general level of prices. On the other hand, it is equally difficult to discern if prices at all reflect costs of production. Taking into account these difficulties in Yugoslav case, real effective rates are calculated on the basis of two indices – index of wholesale prices and consumer price index (tables 13 and 14). Thus, two different real exchange rates are calculated – R1 and R2.

*Table 13: Wholesale Price Indices in Yugoslavia and Selected Countries 1971=100*

| Year | Yugos-lavia | U.S.A. | Germany | Italy | Austria | Switzer-land | France | UK |
|---|---|---|---|---|---|---|---|---|
| 1971 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1972 | 111.0 | 104.4 | 102.6 | 104.1 | 103.9 | 103.6 | 104.6 | 105.3 |
| 1973 | 125.7 | 118.0 | 109.4 | 121.8 | 105.2 | 114.7 | 120.0 | 113.0 |
| 1974 | 163.3 | 140.1 | 124.0 | 171.4 | 121.1 | 133.1 | 154.9 | 139.4 |
| 1975 | 198.6 | 153.0 | 129.7 | 186.1 | 128.8 | 130.0 | 146.1 | 171.6 |
| 1976 | 211.3 | 160.1 | 134.5 | 228.7 | 136.3 | 129.2 | 156.9 | 199.4 |
| 1977 | 231.5 | 169.9 | 138.3 | 268.5 | 140.3 | 129.6 | 165.7 | 235.7 |
| 1978 | 250.2 | 183.1 | 139.8 | 291.0 | 141.8 | 125.2 | 172.9 | 259.0 |
| 1979 | 281.7 | 206.0 | 146.5 | 336.2 | 147.7 | 129.9 | 195.8 | 287.3 |
| 1980 | 362.6 | 235.0 | 157.6 | 403.8 | 160.5 | 136.6 | 213.1 | 327.5 |
| 1981 | 519.9 | 256.5 | 169.9 | 474.0 | 173.3 | 144.5 | 238.0 | 358.9 |
| 1982 | 648.8 | 261.5 | 179.9 | 539.4 | 178.8 | 148.2 | 265.2 | 386.6 |
| 1983 | 860.9 | 264.9 | 182.6 | 592.3 | 179.9 | 148.9 | 288.3 | 407.5 |
| 1984 | 1377.5 | 271.3 | 187.9 | 653.9 | 186.5 | 153.8 | 313.9 | 431.1 |
| 1985 | 2540.1 | 269.9 | 192.4 | 701.6 | 191.4 | 157.3 | 327.7 | 453.5 |
| 1986 | 4280.0 | 262.0 | 187.6 | 695.3 | 181.3 | 151.2 | 318.5 | 473.0 |
| 1987 | 8307.6 | 268.9 | 182.9 | 714.0 | 180.9 | 148.1 | 319.2 | 491.5 |
| 1988* | 25172.2 | 279.6 | 185.3 | 747.6 | 184.1 | 151.6 | 335.7 | 513.6 |
| 1989* | 353996.6 | 293.6 | 191.2 | 795.5 | 189.5 | 158.1 | 354.2 | 539.8 |

*Source: International Financial Statistics Yearbook 1991, p. 114 and 115.*

**Indices in Yugoslavia in exact decimal numbers for 1988: 25172.2 and for 1989: 353996.6.*

*Table 14: Consumer Price Indices in Yugoslavia and Selected Countries (in %)*

*1971=100*

| Year | Yugos-lavia | USA | Germany | Italy | Austria | Switzer-land | France | UK |
|---|---|---|---|---|---|---|---|---|
| 1971 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1972 | 115.9 | 103.3 | 105.5 | 105.7 | 106.4 | 106.7 | 106.2 | 107.1 |
| 1973 | 138.5 | 109.7 | 112.9 | 117.1 | 114.4 | 116.1 | 113.9 | 116.9 |
| 1974 | 169.0 | 121.8 | 120.8 | 139.5 | 125.2 | 127.4 | 129.5 | 135.5 |
| 1975 | 208.7 | 132.8 | 127.9 | 163.3 | 135.8 | 136.0 | 144.8 | 168.3 |
| 1976 | 232.0 | 140.4 | 133.4 | 190.6 | 145.7 | 138.3 | 158.7 | 196.1 |
| 1977 | 266.1 | 149.5 | 138.3 | 225.8 | 153.7 | 140.1 | 173.6 | 227.3 |
| 1978 | 303.7 | 160.9 | 142.0 | 252.9 | 159.2 | 141.6 | 189.4 | 245.9 |
| 1979 | 366.5 | 179.1 | 147.9 | 290.3 | 165.1 | 146.7 | 209.8 | 279.1 |
| 1980 | 479.8 | 203.2 | 155.8 | 352.2 | 175.5 | 152.6 | 237.7 | 329.3 |
| 1981 | 670.7 | 224.2 | 165.7 | 420.9 | 187.4 | 162.5 | 269.6 | 368.5 |
| 1982 | 882.0 | 238.1 | 174.4 | 490.3 | 197.5 | 171.8 | 301.4 | 400.2 |
| 1983 | 1236.5 | 245.7 | 180.2 | 561.9 | 204.1 | 176.9 | 330.3 | 418.6 |
| 1984 | 1912.9 | 256.2 | 184.5 | 622.6 | 215.7 | 182.0 | 354.7 | 439.5 |
| 1985 | 3295.9 | 265.4 | 188.5 | 679.8 | 222.6 | 188.2 | 375.3 | 466.3 |
| 1986 | 6255.6 | 270.5 | 188.4 | 719.9 | 226.4 | 189.7 | 384.7 | 482.2 |
| 1987* | 13812 | 280.5 | 188.7 | 753.8 | 229.5 | 192.4 | 397.4 | 501.9 |
| 1988* | 40622 | 291.7 | 191.2 | 792.2 | 239.9 | 196.0 | 408.1 | 526.6 |
| 1989* | 544296 | 305.7 | 196.5 | 842.1 | 240.0 | 202.3 | 422.4 | 567.6 |

*Source: International Financial Statistics Yearbook 1991, p. 116 and 117.*

** Indices in Yugoslavia in exact decimal numbers for:*

*1987: 13812.4 1988: 40622.2 1989: 544,296.8*

In accordance to the IMF methodology, effective rates of the dinar are calculated on the bases of indirect notation – one dinar is expressed in certain amount of foreign currency. Exchange rates of the dinar in indirect notation are shown in table 15. These rates are reciprocal to the ones shown in table 11.

*Table 15: Exchange Rate of the Dinar 1971–1989 (indirect notation)**

| Year | USD | DEM | ITL | ATS | CHF | FRF | GBP |
|---|---|---|---|---|---|---|---|
| 1971 | 0.059 | 0.189 | 34.246 | 1.428 | 0.226 | 0.301 | 0.023 |
| 1972 | 0.060 | 0.190 | 35.088 | 1.379 | 0.227 | 0.301 | 0.026 |
| 1973 | 0.064 | 0.169 | 40.160 | 1.244 | 0.204 | 0.294 | 0.027 |
| 1974 | 0.058 | 0.145 | 38.910 | 1.044 | 0.154 | 0.267 | 0.025 |
| 1975 | 0.055 | 0.144 | 37.736 | 1.022 | 0.145 | 0.245 | 0.027 |
| 1976 | 0.054 | 0.130 | 47.846 | 0.928 | 0.134 | 0.272 | 0.032 |
| 1977 | 0.054 | 0.116 | 47.846 | 0.839 | 0.111 | 0.260 | 0.029 |
| 1978 | 0.054 | 0.101 | 44.84 | 0.729 | 0.090 | 0.229 | 0.027 |
| 1979 | 0.052 | 0.089 | 42.016 | 0.643 | 0.082 | 0.209 | 0.023 |
| 1980 | 0.034 | 0.066 | 31.25 | 0.468 | 0.059 | 0.153 | 0.014 |
| 1981 | 0.024 | 0.054 | 28.90 | 0.380 | 0.043 | 0.137 | 0.013 |
| 1982 | 0.016 | 0.038 | 21.93 | 0.268 | 0.032 | 0.108 | 0.010 |
| 1983 | 0.008 | 0.022 | 13.26 | 0.154 | 0.017 | 0.067 | 0.005 |
| 1984 | 0.005 | 0.014 | 9.07 | 0.104 | 0.012 | 0.045 | 0.004 |
| 1985 | 0.003 | 0.008 | 5.50 | 0.055 | 0.007 | 0.024 | 0.002 |
| 1986 | 0.002 | 0.004 | 2.97 | 0.030 | 0.003 | 0.014 | 0.001 |
| 1987 | 0.0008 | 0.001 | 0.944 | 0.009 | 0.001 | 0.004 | 0.0004 |
| 1988 | 0.00019 | 0.0003 | 0.252 | 0.002 | 0.0003 | 0.00117 | 0.0001 |
| 1989 | 0.0000084 | 0.0000142 | 0.0107 | 0.0001 | 0.000013 | 0.00005 | 0.0000052 |

** Indirect notation of the exchange rate: number of foreign currency units per dinar.*

*Source: See table 11.*

Nominal effective rate of the dinar is calculated by the formula:

$$N = Wi \frac{Rit}{Rio}$$

*N – nominal effective rate*
*W – weight of the currency "i"*
*Rit – dinar rate in "t" year*
*Rio – dinar rate at the end of 1971*

In table 16, indices of the dinar rate change (Rit/Rio) are shown, on the basis of which nominal effective rates (N) are calculated and shown in table 17 and in chart 1.

*Table 16: Indices of the Dinar Rate Change 1971–1989 (in %)*

*1971=100*

| Year | USD | DEM | ITL | ATS | CHF | FRF | GBP |
|---|---|---|---|---|---|---|---|
| Weight | 0.43 | 0.30 | 0.09 | 0.06 | 0.05 | 0.04 | 0.03 |
| 1971 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 1972 | 101.69 | 100.53 | 102.46 | 96.56 | 100.44 | 100.00 | 113.04 |
| 1973 | 108.47 | 89.42 | 117.27 | 87.11 | 90.26 | 97.67 | 117.39 |
| 1974 | 98.3 | 76.72 | 113.62 | 73.10 | 68.14 | 88.7 | 108.69 |
| 1975 | 93.22 | 76.19 | 110.19 | 71.57 | 64.16 | 81.39 | 117.39 |
| 1976 | 91.52 | 68.78 | 139.71 | 64.98 | 59.29 | 90.36 | 139.13 |
| 1977 | 91.52 | 61.37 | 139.71 | 58.7 | 49.11 | 86.38 | 126.08 |
| 1978 | 91.52 | 53.44 | 130.09 | 51.05 | 39.82 | 76.08 | 117.39 |
| 1979 | 88.13 | 47.08 | 122.68 | 45.02 | 36.28 | 69.43 | 100.00 |
| 1980 | 57.62 | 34.92 | 91.25 | 32.77 | 26.11 | 50.83 | 60.87 |
| 1981 | 40.67 | 28.57 | 84.39 | 26.61 | 19.02 | 45.51 | 56.52 |
| 1982 | 27.11 | 20.1 | 64.01 | 18.76 | 14.16 | 35.88 | 43.47 |
| 1983 | 13.56 | 11.64 | 38.72 | 10.78 | 7.52 | 22.25 | 21.74 |
| 1984 | 8.47 | 7.4 | 26.48 | 7.28 | 5.3 | 14.95 | 17.39 |
| 1985 | 5.08 | 4.23 | 16.06 | 3.85 | 3.09 | 7.97 | 8.69 |
| 1986 | 3.39 | 2.11 | 8.67 | 2.10 | 1.32 | 4.65 | 4.34 |
| 1987 | 1.35 | 0.53 | 2.75 | 0.6 | 0.44 | 1.32 | 1.74 |
| 1988 | 0.32 | 0.16 | 0.73 | 0.14 | 0.13 | 0.38 | 0.43 |
| 1989 | 0.014 | 0.0074 | 0.03 | 0.007 | 0.057 | 0.02 | 0.022 |

*Source: See table 15.*

*Table 17: Nominal Effective Rate of the Dinar – N 1971–1989 (in %)*

| Year | Nominal effective Rate |
|---|---|
| 1971 | 100.00 |
| 1972 | 101.26 |
| 1973 | 101.16 |
| 1974 | 90.08 |
| 1975 | 87.17 |
| 1976 | 87.18 |
| 1977 | 83.53 |
| 1978 | 78.69 |
| 1979 | 73.33 |
| 1980 | 50.56 |
| 1981 | 39.69 |
| 1982 | 27.99 |
| 1983 | 15.32 |
| 1984 | 10.04 |
| 1985 | 7.85 |
| 1986 | 3.38 |
| 1987 | 1.15 |
| 1988 | 0.29 |
| 1989 | 0.013 |

*Source: See table 16.*

*Chart 1: Nominal Effective Exchange Rate of the Dinar N 1971–1989 (in %)*


*Source: See table 19.*

The graph in chart 1, shows that nominal effective rate (N) of the dinar permanently decreased since 1974 in terms of selected currencies. Until 1980, external value of the dinar decreased about 50%. From that year, rapid weakening began to be ended by galloping depreciation in 1987–1989. In 1989, the dinar completely lost its external value. Whether this depreciation led to the real exchange rate could be seen from two calculated real effective rates.

The first real effective rate – R1 is calculated by the index of wholesale prices (table 13). It is shown in table 19 and chart 2.

*Table 18: Indices of Relative Wholesale Prices 1972–1989 (Individual and Average)*

| Year | USA | Germany | Italy | Austria | Switzer-land | France | UK | Avg. |
|---|---|---|---|---|---|---|---|---|
| Weight | 0.43 | 0.30 | 0.09 | 0.06 | 0.05 | 0.04 | 0.03 | |
| 1972 | 94.0 | 92.4 | 93.8 | 93.6 | 93.3 | 94.2 | 94.8 | 93.5 |
| 1973 | 93.9 | 87.0 | 96.9 | 83.7 | 91.2 | 95.5 | 89.9 | 91.3 |
| 1974 | 85.8 | 75.9 | 104.9 | 74.2 | 81.5 | 94.8 | 85.4 | 84.0 |
| 1975 | 77.0 | 65.3 | 93.7 | 64.8 | 65.5 | 73.6 | 86.4 | 73.8 |
| 1976 | 75.8 | 63.6 | 108.2 | 64.5 | 61.1 | 74.2 | 94.3 | 74.1 |
| 1977 | 73.4 | 59.7 | 116.0 | 60.6 | 56.0 | 71.6 | 101.8 | 72.3 |
| 1978 | 73.2 | 55.9 | 116.3 | 56.7 | 50.0 | 69.1 | 103.5 | 70.5 |
| 1979 | 73.1 | 52.0 | 119.3 | 52.4 | 46.1 | 69.5 | 102.0 | 69.0 |
| 1980 | 64.8 | 43.5 | 111.3 | 44.3 | 37.7 | 58.8 | 90.3 | 60.5 |
| 1981 | 49.3 | 32.7 | 91.2 | 33.3 | 27.8 | 45.8 | 69.0 | 46.5 |
| 1982 | 40.3 | 27.7 | 83.1 | 27.6 | 22.8 | 40.9 | 59.6 | 39.3 |
| 1983 | 30.8 | 21.2 | 68.8 | 20.9 | 17.3 | 33.5 | 47.3 | 30.7 |
| 1984 | 19.7 | 13.6 | 47.5 | 13.5 | 11.2 | 22.8 | 31.3 | 20.0 |
| 1985 | 10.6 | 7.6 | 27.6 | 7.5 | 6.2 | 12.9 | 17.8 | 11.1 |
| 1986 | 6.1 | 4.4 | 16.2 | 4.2 | 3.5 | 7.4 | 11.0 | 6.4 |
| 1987 | 3.2 | 2.2 | 8.6 | 2.2 | 1.8 | 3.8 | 5.9 | 3.6 |
| 1988 | 1.11 | 0.736 | 2.970 | 0.731 | 0.602 | 1.3 | 2.04 | 1.1 |
| 1989 | 0.083 | 0.054 | 0.225 | 0.535 | 0.045 | 0.1 | 0.152 | 0.06 |

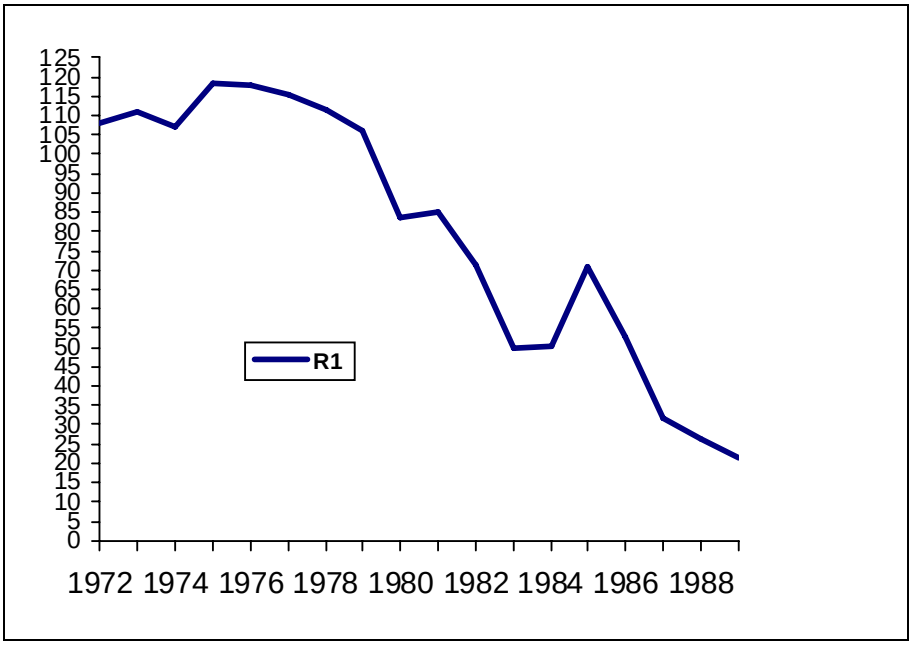
*Source: See table 13.*

*Table 19: Real Effective Rate of the Dinar R1 1972–1989 (in %)*

| Year | Real effective rate 1 |
|---|---|
| 1971 | 100.00 |
| 1972 | 108.3 |
| 1973 | 110.8 |
| 1974 | 107.2 |
| 1975 | 118.1 |
| 1976 | 117.6 |
| 1977 | 115.5 |
| 1978 | 111.6 |
| 1979 | 106.3 |
| 1980 | 83.6 |
| 1981 | 85.3 |
| 1982 | 71.2 |
| 1983 | 49.9 |
| 1984 | 50.2 |
| 1985 | 70.7 |
| 1986 | 52.8 |
| 1987 | 31.9 |
| 1988 | 26.4 |
| 1989 | 21.6 |

*Source: See table 17 and table 18.*

*Chart 2: Real Effective Rate of the Dinar R1 1972–1989 (in %)*




*Source: See table 19.*

The graph of R1 clearly shows that dinar never was on its real level for any length of time in 1972–1988 period. Until 1979, there was real appreciation and from 1980 real depreciation. Hence, dinar was at first overvalued and from 1980 undervalued.

The real effective rate R2 is calculated by deflating N with relative inflation expressed with consumer price index (table 20).

*Table 20: Indices of Relative Inflation Expressed by Consumer Price Indices (Individual and Average) (in %)*

| Year | USA | Germany | Italy | Austria | Switzerland | France | UK | Average |
|---|---|---|---|---|---|---|---|---|
| Weights | 0.43 | 0.30 | 0.09 | 0.06 | 0.05 | 0.04 | 0.03 | |
| 1972 | 89.0 | 91.0 | 91.0 | 91.8 | 92.0 | 91.6 | 92.4 | 90.3 |
| 1973 | 79.2 | 81.5 | 84.5 | 82.5 | 83.8 | 82.2 | 84.4 | 81.0 |
| 1974 | 72.0 | 71.4 | 82.5 | 74.0 | 75.3 | 76.6 | 80.1 | 73.5 |
| 1975 | 63.6 | 61.2 | 78.2 | 65.0 | 65.1 | 69.3 | 80.6 | 65.1 |
| 1976 | 60.5 | 57.5 | 82.1 | 62.8 | 59.6 | 68.4 | 84.5 | 62.7 |
| 1977 | 56.1 | 51.9 | 84.8 | 57.7 | 52.6 | 65.2 | 85.4 | 58.6 |
| 1978 | 52.9 | 46.7 | 83.2 | 52.4 | 46.6 | 62.3 | 80.9 | 54.6 |
| 1979 | 48.8 | 48.8 | 79.2 | 45.0 | 40.0 | 57.2 | 76.1 | 52.0 |
| 1980 | 42.4 | 32.5 | 73.4 | 36.6 | 31.8 | 49.5 | 68.6 | 42.4 |
| 1981 | 33.4 | 24.7 | 62.8 | 27.9 | 24.2 | 40.2 | 54.9 | 33.6 |
| 1982 | 27.0 | 19.8 | 55.6 | 22.4 | 19.5 | 34.2 | 45.4 | 27.6 |
| 1983 | 19.9 | 14.6 | 45.4 | 16.5 | 14.3 | 26.7 | 33.9 | 20.8 |
| 1984 | 13.4 | 9.6 | 32.5 | 11.3 | 9.5 | 18.5 | 23.0 | 14.1 |
| 1985 | 8.1 | 5.7 | 20.6 | 6.8 | 5.7 | 11.4 | 14.1 | 8.6 |
| 1986 | 4.3 | 3.0 | 11.5 | 3.6 | 3.0 | 6.1 | 7.7 | 4.6 |
| 1987 | 2.03 | 1.37 | 5.46 | 1.66 | 1.39 | 2.88 | 3.63 | 2.2 |
| 1988 | 0.72 | 0.47 | 1.95 | 0.58 | 0.48 | 1.00 | 1.30 | 0.8 |
| 1989 | 0.056 | 0.036 | 0.155 | 0.044 | 0.037 | 0.77 | 0.104 | 0.09 |

*Source: Table 14.*

*Table 21: Real Effective Rate of the Dinar R2 1972–1989 (in %)*

| Year | Real Effective Rate R2 |
|---|---|
| 1972 | 112.1 |
| 1973 | 124.9 |
| 1974 | 122.5 |
| 1975 | 133.9 |
| 1976 | 139.0 |
| 1977 | 142.5 |
| 1978 | 144.1 |
| 1979 | 141.0 |
| 1980 | 119.2 |
| 1981 | 118.1 |
| 1982 | 101.4 |
| 1983 | 73.6 |
| 1984 | 71.7 |
| 1985 | 91.3 |
| 1986 | 73.5 |
| 1987 | 52.3 |
| 1988 | 36.2 |
| 1989 | 14.4 |

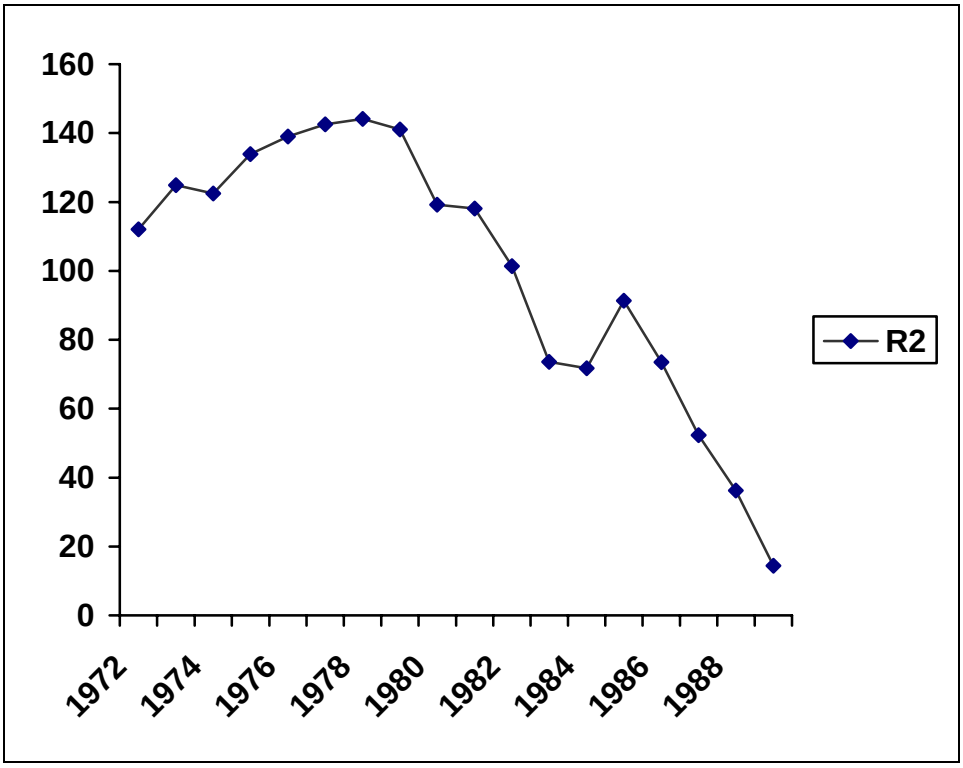
*Source: See table 17 and table 20.*

The graph of the real effective rate R2 is shown in chart 3. As the effective rate R1, R2 also shows similar perfomances of the real rate: first, First dinar had never been on its real level thoughout the period and second, the dinar had been overvalued and than undervalued. R1 and R2 differ in showing degree of real appreciation and the year when dinar entered the zone of real depreciation. According to R2, it happened in 1983.

Index R2 is considered to be the better indicator of the real effective rate than index R1 because wholesale prices in Yugoslavia during the period did not reflect fully rising costs of production. For that reason, retail prices rose faster than wholesale prices.[32]

[32] R. Kovačević, Ekonomski odnosi Jugoslavije sa zemljama OECD, (*Economic Relations Between Yugoslavia and OECD Countries),* Savremena administracija, Beograd, 1991, p.217.

*Chart 3: Real Effective Rate of the Dinar R2 1972–1989 (in %)*




*Source: See table 21.*

Index R2 shows that the dinar was considerably overvalued until 1978 when it reached the highest level of real appreciation (R2 was about 145%). Rising real appreciation stimulated imports and destimulated exports and finally contributed to the highest current deficit in 1979. Since that year, authorities decreased overvaluation but without stabilizing the rate on its real level. On the contrary, they intentionaly continued with real depreciation in the hope to improve the external position of Yugoslavia in the face of a debt crisis that appeared in 1982. Real depreciation influenced an increase in exports and a decrease in imports but these favorable performances were short-lived in conditions of expansionary monetary policy. Continuous monetary expansion neutralized positive effects of real depreciation on the balance of payments simultaneously transforming it into a factor of rising inflation. Consumer price indices shown in table 14 clearly display the accelerating pace of inflation throughout the period. Thus, as in the earlier

period of fixed rates, a vicious cycle of depriciation and inflation again appeared but this time led to hyperinflation of about 1,300% at the end of 1989.

## 3.6 The Main Causes of the Failure of Managed Floating Regime

Adoption of the managed floating regime in 1973 was an adequate choice of the exchange regime but in practice, the expected positive effects were not accomplished. Instead of establishing a real and a single rate, the managed floating regime ended with black market multiple rates and hyperinflation.

Upon consultations with Yugoslavia in reference with the realization of performance criteria agreed in a stand-by arrangement for the period 28.06.1988 – 27.06.1989, the IMF assessed that the real depreciation was one of the main reasons for the breaking targeted inflation of 95% (others were liberalization of prices, increase of wages and rise of nominal interest rates). But, the IMF stressed that the main factor actually was the institutional rigidity of the Yugoslav monetary system that facilitated accomodating monetary policy.[33] Without monetary expansion, the IMF claimed, all other factors would not have exerted such high infaltionary effects. According to the IMF, the NBY was almost without any authority in creating and controlling monetary policy.

Analysis of the functioning of the managed floating regime suggests that there were two main causes of its inefficiency. The first one was confusion of the legal framework stipulated in the Law on Foreign Exchange. The second was hyperinflation. But, as was stressed by the IMF, hyperinflation itself was caused by institutional rigidity of the monetary system. Thus, it could be concluded that both causes were produced by institutional defects of the Yugoslav economic system.

# 4. Comprehensive Economic Program Adopted in December 1989

The Federal Government put in effect the "Program of Economic Reforms and Measures for its Realization" (Program) in December 1989. A year earlier, in November 1988, changes of the Constitution took place which provided first steps towards transition to a market economy.[34] Such nature of the constitutional change enabled the Federal Government to conceptualize the Program on the principles of the market economy. The Program designed not only short-term measures for macroeconomic stabilization but also initiated deep and radical economic reforms to be taken in stages afterwards.

[33] IMF Survey, April 16, 1990, p. 124.
[34] It was the second change of the Constitution adopted in 1974. The first one took place in 1981.

## 4.1 The New Legal Framework

Constitutional changes were carried out with the aims to facilitate the introduction of the market economy and to provide smooth functioning of the Yugoslav market as an integral and single market.[35] These changes facilitated a further process of legal changes by adoption of new laws in 1989 that created a new economic system consistent to the market economy. The most important new laws, adopted before the Program, were: Law on Enterprises (business organization), Law on Banks and other financial organizations, Law on Accounting, Law on Foreign Investments and Law on the NBY and uniform monetary practice (operations) of the popular banks of the republics and autonomous provinces which gave the NBY higher importance in the monetary system and independence in conducting monetary policy in comparison to the proceeding law. Apart from these, completely new, previously non-existent, laws were adopted too: Law on Securities and Law on the Securities Market.

Upon drafting the Program, the Federal Government suggested additional constitutional changes for the establishment of ownership pluralism, political pluralism (multy-party elections), independence of economic units and defining the responsibilities of the Federal Government in conducting macroeconomic policies in the new market-based economic system. Also, the Federal Government proposed the adoption of a completely new constitution.

Already on January 25, 1990, the Yugoslav Presidency announced The Proposal for the New Constitution, explaining that existing Constitution (1974) was not adequate for further economic, social and cultural progress. The Proposal suggested a political system based on a multi-party system and an economic system based on a market model of the economy. In contrast to the 1974 Constitution that brought decentralization and creation of the republican economies and thus practically enabled the process of gradual transformation of the federation into the loose confederation, the Proposal stressed the importance of political and economic reunification of the country.

The Economic Program of December 1989 and the Proposal for the New Constitution represented the last attempt of the reintegration and stabilization of the Second Yugoslavia.

## 4.2 Regime of Fixed Exchange Rate and Convertibility

Implementation of the Program of economic reforms started in the midst of the deepest political crisis of the Second Yugoslavia. The most important aim of the first stage of the Program was to curb inflation and maintain it near the level of the

[35] M. Radosavljević-Peručić, D. Radonjić i J. Jelinčić, Promene Ustava SFRJ, (*Changes of the SFRY Constitution)*, Jugoslovenski pregled, 1–2, 1989.

major trading partners. Macroeconomic stabilization was considered as the main precondition for carrying out economic reforms in the future.

In addition to changes of the legal framework that were already taken to remove institutional causes of inflation, fixed exchange rate regime and convertibility were implemented as the principal anti-inflationary measures.

The fixed exchange rate was pegged to the Deutsche mark – the currency of the Yugoslav major trading partner. The Deutsche mark was also one of the most stable currencies in the world and thus a good choice for being the anchor currency. The rate was pegged at seven dinars per Deutsche mark. It was announced that this level would not be changed until the middle of 1990.

Convertibility was defined for current transactions for all residents and non-residents and included the right of citizens to buy and sell foreign exchange in the banks without limitations. Current convertibility was adopted as an instrument of economic policy and was not registered at the IMF as acceptance of the Article VIII. This was planned to be done at some point of time during the proces of stabilization and reforms.

Just before the Program, radical liberalization of imports was carried out. In 1988, about 53% of all imports were on restrictive regime but at the beginning of the Program implementation this figure decreased to only 13%.[36]

Combination of fixed exchange regime and convertibility, conditioned all other measures of the Program: restrictive monetary policy, restrictive fiscal policy (by restraining public expenditures), liberalization of prices (except of some public utilities) and limitation of wage rise by tying it to exchange rate change. One of the monetary measures was the NBY decision not to advance credits to the Federal Government and to commercial banks if they give loans to firms that incurred losses.

However, implementation of the restrictive fiscal policy on the levels of republics and autonomous provinces was the major problem for the Federal Government due to the fact that it had a mandate to conduct only federal budgetary policy.

On the basis of designed combination of measures, the Program projected figures of the main macroeconomic aggregates for the 1990. It was estimated that GDP would fall at the rate of 2% and that inflation rate would be 13%. The growth of exports was projected at 8% and the growth of imports at 16%. For the balance of payments, current surplus was expected to be about 1.4 billion U.S. dollars and rise of foreign exchange reserves about 2.3 billion U.S. dollars.

The IMF praised the Program, especially institutional changes. After good results achieved in January and February, the IMF approved, on March 16, 1990, the new stand-by arrangement of 460 million SDR as a support to the full implementation of the Program.

[36] Godina reforme*, (A Year of Reform),* Jugoslovenski pregled, 11–12, 1990, p.263.

## 4.3 Realization of the Program in the First Half of 1990

Implementation of macroeconomic measures was successful until the middle of 1990 which gave optimism for the maintenance of convertibility. However, unfortunate reversal started in July. Economic performances gravely worsened in the second part of the year and convertibility was suspended in December 1990. Developments in inflation and balance of payments clearly demonstrate economic performances and their reversal.

During the first half of 1990, monthly inflation rates decreased, from 64% in December, 1989, to zero rate in May 1990, and even deflation occurred in June (table 22). Restrictive monetary policy played the key role in curbing inflation but it had negative effects on declining of industrial production.

Reduction of inflation rates similar to those in Germany, allowed the official rate of seven dinars per Deutsche mark to be unchanged. On the other hand, decreasing inflation influenced nominal and real effective exchange rates. Index of nominal rate had only negligible change but index of real effective rate changed, showing decreasing overvaluation of the dinar and establishment of real rate in June. Stability of the official rate and convertibility resulted in disappearance of the black market, i.e. multiple exchange rates.

Realization of real and single rate return confidence in the dinar and currency substitution vanished.

*Table 22: Basic Economic Indicators January – June 1990 (monthly rates in %)*

| Month | Jan. | Feb. | May | April | May | June |
|---|---|---|---|---|---|---|
| Industrial production | -8.2 | 4.0 | 8.3 | -11.9 | -3.3 | 3.4 |
| Retail prices* | 41.5 | 13.6 | 5.2 | 2.8 | 0.2 | -0.3 |
| | (17.3) | (8.4) | (2.6) | (-0.2) | (0.4) | (0.2) |
| CPI** | 37.6 | 12.7 | 3.8 | 4.4 | 1.9 | -0.9 |
| Exchange rates*** | | | | | | |
| *Nominal* | -0.6 | 0.0 | -0.1 | 0.3 | -0.3 | 0.2 |
| *Real* | 39.6 | 13.1 | 4.8 | 2.8 | -0.6 | -0.2 |
| Money**** | 25.5 | 5.6 | 9.9 | 15.6 | 7.0 | 8.2 |

*Source: Privredna kretanja u prvom polugođu 1990. godine, (Economic Performances in the First Half of the Year), NBJ, avgust 1990, p.16.*

**In parentheses: rates according to second measurements of Federal bureau of Statistics.*

***CPI = Consumer price index.*

**** Nominal effective and Real effective exchange rates.*

***** Quantity of money.*

*Table 23: Balance of Payments January – June, 1989 and 1990 (in mill. U.S. dollars)*

| 1989 | 1990 | |
|---|---|---|
| *1. Merchandise* | -353 | -1503 |
| Export | 6310 | 7231 |
| Import | -6663 | -8734 |
| *2. Services* | 401 | 33 |
| Credit: | 2215 | 2933 |
| Interest | 173 | 254 |
| Transport | 1000 | 1032 |
| Tourism | 661 | 982 |
| Other | 381 | 665 |
| Debit | -1814 | -2900 |
| Interest | -856 | -883 |
| Transport | -580 | -619 |
| Other | -378 | -1398 |
| *3. Transfers* | 597 | 1557 |
| Remittances inflows* | 2727 | 5422 |
| Remittances outflows* | -2130 | -3865 |
| Balance of real transactions | 48 | -1470 |
| Current account balance | 645 | 87 |
| *4.Loans long and middle-term* | -872 | -465 |
| Use | 705 | 655 |
| Repayment | -1427 | -1210 |
| Loans given ** | -150 | 90 |
| *5. Clearing account* | -211 | -351 |
| *6. Short-term credits*** | -400 | -375 |
| *7. FDI* | 0 | 121 |
| *8. Foreign exchange Reserves* | -188 | -2536 |
| *Blanance of capital transactions* | -1671 | -3606 |
| *9. Other**** | 1026 | 3519 |
| Capital account balance | -645 | -87 |

*Source: Privredna kretanja u prvom polugođu 1990. godine, (Economic Performances in the First Half of the Year), NBJ, Avgust 1990, p. 4a.*

** Workers and emigrants remittances*

*** Net value*

**** Including errors and omissions*

Performances of the balance of payments are shown in table 23. In comparison to the first half of the 1989, the surplus of the current account decreased (from 645 to 87 million U.S. dollars) but this can not be judged as worsening, taking into account radical import liberalization. On the capital account, two items showed

incredible increase – reserves and "others". In the whole history of the Second Yugoslavia, yearly increases of the reserves had never paralleled to that half-year increase of 2.5 billion in 1990. At the end of July, reserves amounted to 8,675 billion U.S. dollars. The Iitem "Others" includes "Errors and Omissions" and its increase of 3.5 billion U.S. dollars indicates huge unregistered capital inflows. Also, for the first time from 1945, capital inflow in the form of direct investment appeared which demonstrated rising confidence of foreign investors in economic prospects of Yugoslavia.

Favorable results achieved in the first half of the year initiated talks with the IMF about acceptance of the Article VIII. This transition to official (and factual) convertibility required continuation of the favorable results in performances of prices and balance of payments. Unfortunately sudden reversal occurred in July, when limitations of wage increase were removed and multy-party elections started in republics.

## 4.4 Suspension of Convertibility in December 1990

Instead of 13%, as targeted in the Program, inflation rate in 1990 was 121.3%. Current account balance ended with deficit of 2.3 billion U.S. dollars instead with projected surplus of 1.4 billion U.S. dollars (table 24).

Except for the current account deficit, data from table 24 show huge discrepancies between the NBY and the IMF presentations in figures for some items of the balance of payments. According to the NBY, both subaccounts, current and capital, had deficits that are covered by the surplus of 4,657 billion U.S. dollars of the item "Others" (includes Errors and Omissions). This means that there was no flight of capital from the country. According to the IMF, the same item was in surplus of only 228 U.S. dollars. The second drastic difference is in the balance of services, stemming mainly from the difference in item of other services that show expenditure of 3.5 billion U.S. dollar in the NBY presentation but extraordinary 12,3 billion U.S. dollars in the IMF presentation. Surprisingly high difference is shown in unilateral transfers too. According to the IMF, there was nearly no outflows of unilateral transfers in contrast to the NBY data that show outflow of about 9 billion U.S. dollars.

*Table 24: Yugoslav Balance of Payments 1990 (in mill. U.S. dollars)*

| | NBJ | IMF |
|---|---|---|
| *1. Merchandise* | -4563 | -2676 |
| Export | 14308 | 14308 |
| Import | -18871 | -16984 |
| *2. Services* | 1164 | -9516 |
| Credit: | 7713 | 7163 |
| Interest | 789 | 789 |
| Transport | 2525 | 2094 |
| Tourism | 2774 | 2774 |
| Other | 1625 | 1506 |
| Debit: | -6549 | -16679 |
| Interest | -1667 | -1667 |
| Transport | -1343 | -2719 |
| Other | -3539 | -12293 |
| *3. Transfers* | 1045 | 9828 |
| Inflows | 9860 | 9860 |
| Outflows | -8815 | -32 |
| Rael transaction balance | -3399 | -12192 |
| Current account balance | -2354 | -2364 |
| *4. Loans long and middle-term* | -1281 | -313 |
| Use | 1467 | - |
| Repayment | -2067 | - |
| Debt conversion | -681 | - |
| *5. Loans given** | 285 | - |
| *6. Short-term credits** | -271 | 3551 |
| *7. FDI* | 238 | - |
| *8. Clearing account (increase -)* | -331 | - |
| *9. Foreign exchange reserves* | -943 | -1102 |
| Balance of capital transactions | -2303 | 2136 |
| *10. Other* | 4657 | 228 |
| Capital account balance | 2354 | 2364 |

*Source: 1. Annual Report NBY, 1990, p. 47, 2.Balance of Payments Statistics Yearbook, 1991, p. 784–787.*

** Net value.*

Shown discrepancies suggest that there was huge outflow of capital from Yugoslavia that was concealed in the NBY presentation by the outflows of unilateral transfers and in the IMF presentation by the expenditures of other services. Comparing data of tables 23 and 24, it is obvious that capital flight occurred during the second part of the year. Convertibility of the dinar facilitated this huge capital flight.

All experts claim that inflation rose as a result of the increase in wages and public expenditures in republics in connection with the first post-war multi-party

elections. The Federal Government and the NBY were left without any authority to stop monetary and fiscal expansion.

Inflation ruined effects of the fixed exchange rate regime. According to the NBY data, real appreciation of the effective rate reached 118.3% at the end of 1990. Real appreciation caused worsening of the foreign trade and run on banks for converting dinars into foreign exchange. This exerted enormous pressure on the NBY reserves that decreased by 2.9 billion U.S. dollars in three last months of 1990. The NBY ceased to sell foreign exchange around the middle of December, except for the debt servicing. At the same time, free buying and selling of foreign exchanges for citizens were abolished and limitation of 1000 Deutsche marks was introduced for going abroad. All these measures practically meant suspension of convertibility.

On December 28, 1990, the Federal Government declared devaluation of 28.6% The new exchange rate of nine dinars per Deutsche mark was effective from January 1, 1991.

It is evident that convertibility of the dinar failed not because of inadequate economic policy formulated in the Program but because of impossibility to implement that policy in the environment of political disintegration of the country.

# 5. Conclusion

The dinar, as national currency of the Second Yugoslavia, underwent three foreign exchange rate regimes – fixed (1945–1973), managed floating (1973–1989) and again fixed that was introduced in December 1989 together with convertibility as the anchor of macroeconomic stabilization.

Analysis shows that applied regimes were appropriate in reference to the external and internal economic conditions of the time of their introduction. However, under all three regimes, the dinar remained a overvalued currency and multiple exchange rates prevailed. Only occasionally, the exchange rate approached the real levels but just for the very brief periods of time – after devaluations under the first fixed regime, in 1983 under the managed floating and about the middle of 1990 under the second fixed regime. Multiple exchange rates were at first applied as the government policy, in the form of explicit and implicit rates, but later took the form of illegal rates on the black market that emerged in 1980's. Overvaluation and multiple exchange rates disabled the dinar from becoming a convertible currency. Thus, it could be concluded that the foreign exchange policy of the Second Yugoslavia was inefficient.

Overvaluation of the dinar produced three main consequences: first, permanent deficit of the current account of the balance of payments; second, a vicious cycle of mutually conditioned devaluation (depreciation) and inflation; third, money substitution.

There are several main causes for the inefficiency of the foreign exchange policy. They could be categorized as direct and indirect. The direct causes are: persistent structural imbalances of the economy, inflation (hyperinflation), inconsistency in overall macroeconomic policy (particularly between monetary and foreign exchange policies), fundamental defects of the legal and institutional systems and political disintegration of the country that began with the adoption of the 1974 Constitution and ended in the 1990/1992 period. These direct causes, however, have their roots in the implementation of the import-substitution strategy on the one hand and the ideological concept of a self-management socio-economic system on the other. Both factors highly suppressed the functioning of the market mechanism. But, without true market economy, true market concepts – foreign exchange rate and convertibility, did not have a chance to develop and exercise their functions fully.

It is striking that major programs of economic reforms since 1965 were adequate to the causes of the unreal rate and external deficits (and supported by the IMF) but could not be implemented because of the lack of political courage, will and cohesion.

The case of the Secocnd Yugoslavia again confirms the old truism – stable political environment is the basic precondition for the stability and convertibility of the national currency.

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