

TRANSLATING THE FINANCIAL STATEMENTS OF SUBSIDIARIES OPERATING IN TURKEY:

ARE TRADITIONAL TRANSLATION METHODS APPLICABLE?

Dr.Tuba DUMLU

M.Ü. İ.İ.B.F. İngilizce İşletme Bölümü, Öğretim Görevlisi

ÖZET : Çokuluslu şirketlerin ve bunların bağlı şirketlerinin artması, uluslararası muhasebenin gerekliliğini ve önemini ortaya çıkarmıştır. Uluslararası muhasebenin önemli konularından birisi hiç kuşkusuz mali tabloların dönüştürülmesidir. Mali tabloların dönüştürülmesi, çokuluslu şirketlerin doğru konsolide mali tablolarına ulaşabilmeleri açısından çok önemlidir. Çokuluslu şirketlerin hiperenflasyonist ülkelerde faaliyet gösteren ve o ülkenin para biriminden mali tablolarını hazırlayan bağlı şirketleri olduğunda, mali tabloların anaşirketin faaliyet gösterdiği ülkenin para birimine dönüştürülmesi, anaşirketin doğru konsolide mali tablolarına ulaşabilmesi açısından daha da önem kazanır.

Bu çalışmanın amacı, Türkiye'de faaliyetlerini sürdüren yabancı bağlı şirketlerin mali tablolarını dönüştürürken, kur ve/veya yöntem seçimlerine yardımcı olmaktır.

I-INTRODUCTION

Perhaps the most significant aspect of international accounting is the translation of foreign financial statements. The process of translation implies that one currency is expressed or restated in terms of another currency[1].

Accounting is based on a single currency idea, in order to facilitate the grouping of like financial data. Because the nature of accounting and its reliance on the principles of mathematics, the accounting records of a given firm must be kept in a single currency, or the component parts cannot be added together to provide meaningful sums on the financial reports.

Because of "accounting nationalism," each nation has its own accounting principles for firms legally established within its borders. When one firm owns firms in another country, these foreign operations (subsidiaries, branches, or joint ventures) will account for their activities in accordance with that country's accounting rules and will keep their accounting records in that nation's currency. If the country of the parent corporation has an accounting requirement for group or consolidated financial statements, then the foreign statements, if included in the consolidated statements, must be

translated in three areas before they can be consolidated: (1) language, (2) accounting concepts, and (3) currency.

II-TRANSLATION METHODOLOGIES

The translation of foreign financial statements requires a translation method, which has two working parts[2]. One part specifies what exchange rates should be used to translate each line of the foreign financial statements into the local currency. There are three alternatives: (1) The exchange rate in effect between the currencies as of the date of the translation, called the current rate; (2) the rate in effect when the underlying transaction took place, called historical rate; and (3) the rate in effect during a given time period called the average rate. A currency translation method will have rules governing which of these three rates to use for each element of the foreign financial statements.

A second working part of the currency translation method must prescribe the treatment for imbalance, a situation resulting from elements in the financial statements translated at the current rate. If currency values change, then foreign exchange translation gains or losses may result. Assets and liabilities that are translated at the current (post change) exchange rate are considered to be exposed, while those translated at a historic (pre change) exchange rate will maintain their historic values and, hence, are regarded as not exposed. **Translation exposure** is just the difference between exposed assets and exposed liabilities[3]. The controversies among accountants concern which assets and liabilities are exposed and when accounting-derived foreign exchange gains and losses should be recognized. A crucial point to realize in setting these controversies in perspective is that such gains and losses are of an accounting nature; i.e., no cash flows are necessarily involved.

II.1. Current-Noncurrent Method

Under the current-noncurrent method, current assets and liabilities are translated at current exchange rates and noncurrent assets and liabilities and stockholders' equity are translated at historical exchange

rates[1]. Hence, a foreign subsidiary with positive local currency working capital will give rise to a translation loss (gain) from a devaluation (revaluation) with the current-noncurrent method and vice versa if working capital negative.

The income statement is translated at the average exchange rate of the period, except for those revenues and expense items associated with noncurrent assets or liabilities. The latter items, such as depreciation expense, are translated at the same rates as the corresponding balance sheet items. Thus it is possible to see different revenue and expense items with similar maturities being translated at different rates[3].

II.2. Monetary-Nonmonetary Method

The monetary-nonmonetary model focuses on the financial character of the foreign financial statement element to determine which rate to use to translate into the home currency[2]. The monetary-nonmonetary method differentiate between monetary assets and liabilities, those items that represent a claim to receive, or an obligation to pay, a fixed amount of foreign currency units, and nonmonetary, or physical, assets and liabilities[3]. Monetary items (e.g., cash, accounts payable and receivable, and long-term debt) are translated at the current rate; nonmonetary items (e.g., inventory, fixed assets, and long-term investments) are translated at historic rates[3].

Income statement items are translated at the average exchange rate during the period, except for the revenue and expense items related to nonmonetary assets and liabilities. The latter items, primarily depreciation expense and cost of goods sold, are translated at the same rate as the corresponding balance sheet items. This can lead to a situation in which the cost of goods sold is translated at a rate different from that used to translate sales.

II.3. Temporal Method

According to temporal method, cash, receivables, and payables (both current and noncurrent) are translated at the current rate. Other assets and liabilities may be translated at current or historical rates, depending on their characteristics. Assets and liabilities carried at past exchange prices are translated at historical rates. For example, a fixed asset carried at the foreign currency price at which it was purchased would be translated into the reporting currency at the exchange rate in effect when the asset was purchased. Assets and liabilities carried at current purchase or sales exchange prices, or future exchange prices would be translated at current rates. For example, inventory carried at market would be translated at the current rather than the historical rate.[1]

The temporal model concentrates on the measurement base underlying the element on the balance sheet. Foreign balance sheet items are measured according to three different bases:[2] past exchange prices (historical cost), current exchange prices (current value), and future value. The underlying measurement base is accepted as the primary criterion to determine which exchange rate to use. If the balance sheet is stated at the current or future exchange prices, then the current rate is used, but if the underlying measurement base is past exchange prices, then the historical rate should be used. As usual, stockholders' equity, except for retained earnings, is translated at the historical rate. Under the temporal model, on the income statement, the cost of goods sold and the depreciation expense are translated at their historical rates[2]. The advantage of this method is that it gives the best indication of real performance in the translated currency when assets are valued on a mixed basis of historical cost and market price[4].

II.4. Current Rate Method

The fourth method is called the current rate method, the closing-rate method, or sometimes the net-assets method. The current rate method is the easiest to apply because it requires that all assets and liabilities be translated at the current exchange rate[1]. Only net worth would be translated at the historical rate. All assets - current, noncurrent, monetary, nonmonetary - and all liabilities are translated at the current rate. This approach is easier to use than the others because a firm would not have to keep track of various historical exchange rates. On the income statement in the purest form of the model, both the cost of goods sold and the depreciation expense are translated at the current rate as well, but they may be translated at an average rate, too[2].

The current rate approach results in translated statements that retain the same ratios and relationships that exist in the local currency[1].

The use of the current rate throughout ignores the idea that there will be appreciation in assets to offset currency devaluation, or depreciation to offset revaluation. Under this method, if a firm's foreign currency denominated assets exceed its foreign currency denominated liabilities, a devaluation must result in a loss and a revaluation in a gain. One variation is to translate all assets and liabilities except net fixed assets at the current rate.

TABLE I The Comparison of Translation Models for Balance Sheet and Income Statement

Balance Sheet Items	Translation Rate Used			
	C-NC	M-NM	T	CR
Cash	C	C	C	C
Current Receivables	C	C	C	C
Merchandise (cost)	C	H	H	C
Prepaid Items	C	H	H	C
Plant, Prop., Equip.	H	H	H	C
L/T Intangible Assets	H	H	H	C
Current Payables	C	C	C	C
Long-Term Debt	H	C	C	C
Contributed Capital	H	H	H	H
Retained Earnings	X	X	X	X
Income State. Items				
Cost of Goods Sold	C	H	H	C or A
Depreciation Expense	H	H	H	C or A

Where, C=current Rate, H=historical Rate, A=average rate, X=not translated

Source: Thomas G. Evans, Martin E. Taylor, Oscar Holzmann, "International Accounting and Reporting", PWS-KENT Publishing Comp., 1988, p.170

Table I shows the main differences among the four translation models for balance sheet and income statement items. As can be seen, both the monetary-nonmonetary and the temporal methods are quite close, but the current-noncurrent and the current rate methods stand apart, both from each other and from the other two methods.

III.OBJECTIONS TO TRADITIONAL TRANSLATION METHODS

Companies were advised to use temporal method in translating foreign financial statements by the issuance of 8th standard by FASB in 1975.

Because of some criticisms FASB studied on another standard and issued 52nd standard in 1981. With this standard, current rate method was advised to be used in foreign currency statements' translation. By the issuance of FASB 52 another concept became important; that is the functional currency. Especially for the subsidiaries which operate in highly inflationary countries, the financial statements prepared by foreign currency required to be remeasured from local currency to functional currency using temporal method and translate to reporting currency using current rate method.

In this section, I will mention the criticisms about current translation methodologies under an environment where there are general price level changes.

Objections to Current-Noncurrent and Monetary-Nonmonetary Methods

In their article "Accounting Measures of Foreign Exchange Exposure: The Long and Short of It" Aliber and Stickney (1975)[5] discussed the inconsistency of current-noncurrent and monetary-nonmonetary methods regarding exposure to exchange losses.

According to these authors; the decision as to whether the historical exchange rate or the current exchange rate will be used in translation is often based on whether the asset or liability is a monetary or nonmonetary item. Monetary items, those receivable or payable in terms of a fixed number of foreign currency units, are translated at the current exchange rate. Nonmonetary items primarily land, building, and equipment are translated at the historical exchange rate.

Consider first the nonmonetary items. Use of the historical exchange rate rests on the assumption that the exchange gain or loss that would be reported if the current rate were used is approximately offset by a change in the local currency price of asset. Those who advise that historical rates be used to measure exchange exposure of nonmonetary assets implicitly believe that the Purchasing Power Parity (PPP) theory is valid. This theory concerns the relationship between the commodity price levels in two countries and the equilibrium exchange rate between their currencies; the theory states that changes in the equilibrium exchange rate from one date to another are proportional to changes in the ratio of the prices of similar representative market baskets of goods available in two countries. If the PPP theory holds perfectly for all commodities, exchange losses and changes in local prices of nonmonetary assets are offsetting and thereby not exposed.

Consider now the monetary items. Use of the current rate implies that these items are exposed to the risk of exchange losses.

Those who advise using the current exchange rate to measure the exchange exposure of a firm's monetary assets and liabilities reject the proposition that changes in exchange rates are reflected in the relative differential in interest rates on similar assets denominated in the several currencies - a relationship which economists call the Fisher Effect. The proposition is that interest rates or asset denominated in currencies expected to depreciate are higher than those on assets denominated in currencies expected to depreciate less or to appreciate in value and conversely.

Thus the current methodology for translating foreign assets and liabilities into reporting currency assumes that the Purchasing Power Parity Theory holds while Fisher Effect does not. Nonmonetary items are not considered exposed to exchange losses while monetary items are exposed to such losses.

In their article Aliber and Stickney computed the annual percentage deviations from the PPP theory for 48 countries (including Turkey) for the period 1960 to 1971. They also computed percentage deviations from the Fisher Effect for 7 developed countries for the period 1960 to 1971 and for 6 developing countries for the period 1966-1971. The result for Turkey is shown in Table 2.

TABLE 2 Percentage Deviations from the Purchasing Power Parity Theory - Results for Turkey

1961	1.5	1967	11.0
1962	3.2	1968	1.7
1963	5.2	1969	-0.4
1964	-0.5	1970	-38.8
1965	2.9	1971	21.0
1966	5.5	Average Annual	1.1

Source: Aliber, Robert Z., Stickney Clyde P.: "Accounting Measures of Foreign Exchange Exposure: The Long and Short of It", Accounting Review, 1975, p.56

Their principal conclusion is that "the current translation methodology does not appear to be appropriate when measuring exposure to exchange losses. The empirical data suggest that the classification of the assets and liabilities used by accountants (monetary-nonmonetary, current-noncurrent) is not critical variable in measuring exposure. Instead, the firm's planning horizon is of critical importance. Over relatively short horizons (two to three years), all assets and liabilities tend to be exposed. Over longer periods, the increased validity of the Purchasing Power Parity and Fisher theories indicates that most assets and liabilities are not exposed to exchange gains and losses. Since the anticipated holding period of land, building, equipment, and long-term receivables and payables extends over several years, it seems reasonable to assume that these items are not exposed to exchange losses. Assets held in developing countries tend to be more exposed to exchange losses than assets located in developed countries. The holding period for current assets and liabilities, on the other hand, is much shorter so that these items tend to be to exchange losses over periods of two to three years. Such a measurement horizon may be too short, however, for purposes of estimating exchange exposure. A long-term investment may be viewed as a linked series of short-term investments. If the firm's holdings of current assets and liabilities are reasonably constant, its investment in these

items might be viewed as essentially long-term in nature and thus not exposed over more extended time periods." [5]

Objections to Statement of Financial Standards Board (SFAS) No. 52

The financial statements of MNCs are intended to provide one source of information regarding the effects of exposure to exchange risk. However, the accounting requirements of SFAS No.52 fail to disclose fully exposure to exchange risk. This occurs since the implied assumptions inherent, in the required accounting practices, regarding the comovements of exchange rates price level changes are not met in many hyper-inflationary economies.

1. David A. Ziebart (1985) issued an article as "Exchange Rates and Purchasing Power Parity: Evidence Regarding the Failure of SFAS No.52 to Consider Exchange Risk in Hyper-inflationary Countries." [6] This study empirically investigated the implicit assumptions of SFAS No.52 in situations of hyper-inflation. The assumption that balance sheet items translated at the historical exchange rate are not exposed to exchange gains or losses empirically shown to be false through application of purchasing power parity (PPP) theorem. The empirical evidence supports the concept that most hyper-inflationary countries systematically experience exchange risk exposure.

Ziebart states that in instances in which hyper-inflation exists, the nonmonetary items are carried at the original cost and the original historical exchange rate. In essence, it is assumed that nonmonetary items are not exposed to exchange gains or losses since any exchange gain or loss would be offset by a change in the local currency price of the asset. This failure to consider the potential exchange risk for nonmonetary items presumes that the PPP theory does hold.

The purchasing power parity theory ties the change in the foreign exchange rate between two countries to the change price levels for the two countries. Changes in the equilibrium exchange rate are proportional to changes in the ratio of foreign to domestic prices.

The PPP exchange rate is computed based on the relative changes in inflation and the previous year's actual ending exchange rate. The PPP exchange rate is computed as;

$$E_t = E_{t-1} \times (1+I_f) / (1+I_d)$$

where, E_{t-1} is the current year consumer price level change for the foreign country, and I_d is the current year consumer price level change in the parent country. The computed parity error is the actual end of the current year exchange rate less the implied purchasing power

parity exchange rate. Table 3 provides summary information regarding the number of years in which the error is positive or negative, the total error over the period of analysis, the average error, the cumulative percentage error, and the average percentage error. This evidence seems to support the concept that the PPP theorem holds in the long-run and that there is little systematic exchange risk exposure.

TABLE 3 Summary of Computed Parity Errors - Results for Turkey

Years of Analysis	Parity Error*		Parity Error (%)	
	Cumulative	Average	Cumulative	Average
1956-1983	117.9	4.2	77	2.0

* Foreign currency unit per US dollar

Source: Ziebart, David A.: "Exchange Rates and Purchasing Power Parity: Evidence Regarding the Failure of SFAS No.52 to Consider Exchange Risk in Hyper-Inflationary Countries". International Journal of Accounting, Fall, 1985, p.47

The parity error is recomputed for Turkey using the cumulative parity approach. The results of this analysis, provided in Table 4, differ considerably from the previous findings. These results indicate that the PPP theory is much less valid when cumulative inflation effects are considered. Turkey has a systematically positive parity error over the period of analysis. The actual exchange rate of the foreign currency for parent country's currency is greater than that implied by the PPP theorem. The actual exchange rate increases more rapidly than the relative price level. In this case, the multinational corporation is exposed to unfavorable exchange risk. The evidence indicates systematic unfavorable exchange risk for Turkey.

TABLE 4 Summary of Computed Parity Errors Based on a Cumulative Parity Adjustment - Results for Turkey

Years of Analysis	Parity Error*		Parity Error (%)	
	Cumulative	Average	Cumulative	Average
1956-1983	584.9	20.9	1177	42.0

Foreign currency unit per US dollar.

Source: Ziebart, David A.: "Exchange Rates and Purchasing Power Parity: Evidence Regarding the Failure of SFAS No.52 to Consider Exchange Risk in Hyper-Inflationary Countries", International Journal of Accounting, Fall, 1985, p.47

Countries in which the long-run cumulative validity of the PPP theorem is suspect are not accurately portraying economic reality in their balance sheets. Through valuation of a foreign subsidiary's fixed assets at the historical cost and historical exchange rate, exposure

to exchange risk is completely ignored, and the asset's value may be systematically overstated or understated.

According to the conclusions of Ziebart "this paper provides evidence which does not support the concept that fixed assets of subsidiaries operating in hyper-inflationary countries are not exposed to exchange risk. For most hyper-inflationary countries, there is a large deviation between the actual exchange rate and an implied exchange rate that considers previous level changes. Exposure to exchange risk exists for fifteen of the eighteen countries which meet the hyper-inflation criterion of SFAS No.52.

These results contradict the findings of Aliber and Stickney and imply that the reporting requirements of SFAS No.52 fail to consider exchange risk exposure in hyper-inflationary countries. To the extent that exchange risk exposure exist in non-hyper-inflationary countries, the results of this study are generalizable to other foreign (non-hyper-inflationary) countries. The use of historical costs and historical exchange rates in financial reporting of fixed assets ignores exchange risk exposure and leads to misvaluation of nonmonetary items on the statement of financial position." [6]

2. According to Ruland and Douppnik in their article "Foreign Currency Translation and the Behavior of Exchange Rates" [7] issued in 1988 that two major controversies exist in the translation of foreign currency financial statements: (1) which translation method should be used, and (2) how should the resulting translation gains and losses be reported. That is, the first controversy is which method provides the most reasonable measure of the foreign entity's exposure to movements in exchange rates. The second controversy is whether translation gains and losses should be reported in the income statement or whether they should be deferred and shown in the stockholders' equity section of the balance sheet.

The functional currency approach required in FAS 52 has two possible shortcomings. First, the assumption of exchange risk exposure for all assets when the functional currency is foreign is questionable. It will be demonstrated below that for some assets, exchange risk is a function of the purchasing power parity between the US dollar and the foreign currency. Second, as the FASB acknowledges in FAS 52, not all subsidiaries can be neatly classified as having a foreign or a domestic functional currency. When this is the case, management must subjectively determine which is more appropriate.

The major difference between the current rate and temporal methods is the exchange rate used to translate nonmonetary assets (primarily inventory and fixed assets). The temporal method translates these assets using the historical exchange rate, thereby assuming that they are not exposed exchange risk. Use of the current rate

method implies that nonmonetary assets are exposed to exchange risk.

In economic terms, nonmonetary assets are exposed to exchange risk to the extent that their current value in local currency does not adjust by the change in exchange rates.

If it can be assumed that, on average, the local currency value of nonmonetary assets in an economy increase by the rate of inflation, then when the change in exchange rates is proportional to the rate of inflation, nonmonetary assets are not exposed to exchange risk.

The purchasing power parity theory (PPP) asserts that a change in relative price levels between two countries results in a proportional change in exchange rates.

If PPP holds, the value in constant dollars is maintained and no economic gain or loss results: that is, foreign nonmonetary assets are not exposed to exchange risk. If PPP holds, an appropriate translation method will reflect no risk exposure for foreign nonmonetary assets. The temporal method accomplishes this objective.

If PPP does not hold, then nonmonetary assets are exposed to exchange risk and the gain or loss associated with this risk is a function of the degree to which the change in exchange rates deviates from the change predicted by PPP. The temporal method reflects no gain or loss, and is no longer appropriate when PPP does not hold.

Use of the current rate method results in a gain or loss that is a function of the actual change in exchange rates during the period. However, nonmonetary assets need be adjusted through translation only for the deviation between actual exchange rate changes and the exchange rate changes predicted by PPP.

IV-APPLICABILITY OF TRADITIONAL TRANSLATION METHODS IN TURKEY

When we look at these articles, we can easily see that they all have a common opinion about using historic and current rates in translating nonmonetary assets - especially inventories and fixed assets. According to their opinion, using historic rate will give a wrong result. That is; the ones who support using historic rate in translating inventories and fixed assets assume strictly that PPP holds. They say that the exchange gain or loss that would be reported if the current rate were used is approximately offset by the change in the local currency price of the asset. The assumption of the people who support to use current rate in translating inventories and fixed assets is not different. So they all assume that the nonmonetary assets translated at current and historic rate are not exposed to exchange rate risk.

Most of the authors have again a common opinion about translating monetary assets. That is the most appropriate rate to use for monetary assets is their current rate. One author mentioned that the necessity of adjusting monetary assets by inflation differential between home and foreign countries and the other mentioned the importance of Fisher Effect.

In Turkey, monetary balance sheet items, that is receivables and payables both current and noncurrent are shown in balance sheet at their maturity values. For example if a company has some current payables, the figure includes the principal plus the interest. Since Turkey has to work with hyper-inflation, even for one month, two months etc., some amount of interest charged on payables as well as on receivables. My opinion about translating monetary items is that to use the current exchange rate.

At the point of translation, all monetary items should be discounted to present. By doing so, in terms of local currency, company comes up with its exact amount of monetary assets and liabilities as of balance sheet date. After bringing all monetary items to present, all monetary items should be translated by using current exchange rate, that is the rate valid at the point of translation. Since the historic rate is very smaller than the current rate, the monetary items will be exposed. The resulting translation gain or loss should be shown directly in the income statement. Another important point related with the monetary items is that they show cash inflows and cash outflows and cash itself. So it is impossible to make inflation adjustment related with monetary items.

The importance of trying to find out the most appropriate translation methodology is that the result will effect the purchasing power of owners' equity. Underestimating or overestimating will cause decrease or increase in purchasing power of owners' equity respectively.

That is why, I give importance to **Purchasing Power Parity Theorem**.

When we look at the previous sections, we see the studies of some authors related with PPP theorem and PPP deviations. In those studies domestic currency takes as USD (\$), domestic inflation (consumer price changes) taken as inflation in USA. Foreign currencies and foreign inflations are the currencies of several hyper inflationary countries' currencies and inflation rates including Turkey.

We see from Table 2 that annual percentage deviations from the PPP Theory for the years from 1961 to 1971. The average annual deviation for Turkey is 1.12. From Table 3 and 4 again we see the average parity errors and average parity errors based on a cumulative parity

adjustment for the years from 1956 to 1983 as 2.0 and 42.0 respectively.

The PPP deviations carrying plus sign show that the exchange rate was above than it should be.

Now, I will make an extension of the studies about PPP deviation for Turkey for the years from 1985 to 1997. My methodology of calculating PPP deviations is the same as the Ziebart's[6] and Ruland & Doupanik's[7] methodologies.

Depending on the time period analyzed, the PPP implied exchange rate at the end of the period is calculated by adjusting the beginning of the period exchange rate for relative price level changes. The

difference between the implied and actual end-of-period exchange rates is the cumulative PPP deviation.

For example, to calculate the cumulative PPP deviation from the beginning of 1985 to the end of 1997, the implied end-of-period exchange rate would be calculated by adjusting the beginning 1985 exchange rate for the relative price-level changes in the two countries during the 1985-1997 period.

The only data needed to make this calculation would be price-level and exchange rate information for the beginning and end of the period. PPP deviations will be calculated relative to USD (\$) in order to keep the consistency with above studies.

The results of the analysis is presented in Table 5.

TABLE 5 The Results of Purchasing Power Parity Tests

Years	Actual Beginning Exchange Rate	Actual Ending Exchange Rate	Yearly Inflation Rate in Turkey (%)	Yearly Inflation Rate in USA (%)	PPP Exchange Rate (End.)	Parity Error Nominal	Parity Error %	
1985	448.74	579.71	43.2	3.6	620.27	-40.56	-6.54	
1986	579.71	759.68	35.6	1.9	771.43	-11.75	-1.52	
1987	759.68	1023.44	44.9	3.6	1062.53	-39.09	-3.68	
1988	1023.44	1816.65	77.0	4.1	1740.14	76.51	4.39	
1989	1816.65	2316.00	71.0	4.8	2964.19	-648.19	-21.87	
1990	2316.00	2933.00	65.3	5.4	3632.21	-699.21	-19.25	
1991	2933.00	5085.00	67.9	4.2	4726.01	358.99	7.59	
1992	5098.00	8573.00	73.5	3.0	8587.41	-14.41	-0.17	
1993	8602.00	14487.00	75.6	3.0	14665.16	-178.16	-1.21	
1994	14538.00	38765.00	125.0	3.0	31757.77	7007.23	22.06	
1995	38765.00	61361.00	90.3	2.8	71760.50	-10399.50	-14.49	
1996	59800.00	107198.00	90.4	2.9	110650.33	-3452.33	-3.12	
1997	107571.00	205740.00	97.9	2.4	207893.55	-2153.55	-1.04	
							excluding 1994	
Cumulative Deviation (nominal)					-10,194.02	-17,201.25		
Average Deviation (nominal)					-784.16	-1,433.44		
Cumulative Deviation (%)					-38.85	-60.91		
Average Deviation (%)					-2.99	-5.08		

This method of computing the implied purchasing power parity exchange rate treats every year as independent since the computation assumes that the beginning exchange rate (last year's end-of-the-year rate) has been appropriately adjusted for changes in price level that occurred in the preceding year. The parity error is based only on results for a single year, and the error does not consider any uncorrected parity errors from previous periods. The average percentage error is somewhat biased (understates the deviation from parity) when it is used to determine the existence of exchange risk on a long-term basis. It portrays the average yearly exchange risk exposure, not the yearly average exchange risk exposure.

So, the parity exchange rate to be used in the evaluation of long-term exchange risk exposure should be computed as:

$$E_t = E_{t-1}^* \times (1+I_f) / (1+I_d)$$

where E_{t-1}^* is the implied parity exchange rate at the end of the previous year. The parity error computation provides a measure of the cumulative long-term error that exists throughout the period of analysis. Failure of the exchange rate to adjust completely in one year (for the price level changes in that year) is carried through multiple years until a catch-up adjustment may occur. If no catch-up adjustment occurs, the parity errors of previous periods remain in the error computation, and the measure is appropriate for the analysis of long-run exchange risk exposure.

TABLE 6 The Results of Purchasing Power Parity Tests

Years	Actual Beginning Exchange Rate	Actual Ending Exchange Rate	PPP Exchange Rate (End.)	Parity Error Nominal	Parity Error (%)
1985	448.74	579.71	620.27	-40.56	-6.54
1986	579.71	759.68	825.40	-65.72	-7.96
1987	759.68	1023.44	1154.45	-131.01	-11.35
1988	1023.44	1816.65	1962.90	-146.25	-7.45
1989	1816.65	2316.00	3202.82	-886.82	-27.69
1990	2316.00	2933.00	5023.01	-2090.01	-41.61
1991	2933.00	5085.00	8093.70	-3008.70	-37.17
1992	5098.00	8573.00	13633.56	-5060.56	-37.12
1993	8602.00	14487.00	23243.24	-8756.24	-37.67
1994	14538.00	38765.00	50774.67	-12009.67	-23.65
1995	38765.00	61361.00	94359.56	-32998.56	-34.97
1996	59800.00	107198.00	174597.27	-67399.27	-38.60
1997	107571.00	205740.00	337429.66	-131689.66	-39.03

Cumulative Deviation (nominal)	-264,283.03
Average Deviation (nominal)	-20,329.46
Cumulative Deviation (%)	-350.81
Average Deviation (%)	-26.98

V.CONCLUSION

When we look at the result of analysis, we can easily see that from 1985 to 1997, PPP does not hold in Turkey relative to USD (\$). In other words, the change in exchange rate of Turkish Lira to USD (\$) from the beginning of a period to the end of the period is not equal to the relative price changes of two countries - Turkey & USA. During the period of analysis, we can also see that Turkey was suffering hyper-inflation - that is the total of inflation rates each of each three consecutive years exceeding 100%. By looking at the previous analysis of different authors and my current analysis, we can say that;

"PPP does not hold in Turkey in the case of hyper-inflation".

At the same analysis, it is very obvious that not only for Turkey, but for all other hyper-inflationary countries, PPP does not hold. For those countries more or less there are some amount of PPP deviations.

As noted in previous sections, the current translation methodologies are based on the assumption that PPP does hold.

Since the PPP does not hold in hyper-inflationary countries - like Turkey - current translation methodologies in translating nonmonetary items are useless.

Monetary-nonmonetary method is useless: according to this method, nonmonetary balance sheet items translated at historical exchange rate rests on the assumption that the exchange gain or loss that would be reported if the current rate were used is approximately offset by a change in the local currency price of asset. In other words, PPP theorem assumed to be held.

Current-noncurrent method is useless: according to this method, as nonmonetary items, inventory and prepaid expenses translated at current rate while fixed assets translated at the historical rate. The difference between monetary-nonmonetary and current-noncurrent methods is the rate used in translating inventory and prepaids from nonmonetary items point of view. Using current rate in translating inventory and prepaids will cause them to be exposed by exchange rate risk. The translation exposure will be underestimated or overestimated according to PPP deviations carrying plus or minus sign respectively.

Temporal method is useless: because of the same reason mentioned in monetary-nonmonetary method.

Current rate method is useless: because of the same reason mentioned in current -noncurrent method.

BIBLIOGRAPHY

- [1]-LEE Radebaugh, Sidney J. Gray, "International Accounting and Multinational Enterprises", **John Wiley & Sons Inc.**, 3rd Edition, p.339
- [2]-THOMAS G. Evans, Martin E. Taylor, Oscar Holzmann, "International Accounting and Reporting", **PWS-KENT Publishing Comp.**, 1988, p.167
- [3]-ALAN C. Shapiro. "Multinational Financial Management". **Boston: Allyn and Bacon**, 1982, p.112
- [4]-STEFAN H. Robock, Keneth Simmonds. "International Business and Multinational Enterprises", **3rd Edition, Homewood**, 111.:R.D.Irwin, 1983, p.495
- [5]-ALIBER, Robert Z., Stickney, Clyde P., "Accounting Measures of Foreign Exchange Exposure: The Long and Short of It", **Accounting Review**, 1975, p.44-57
- [6]-ZIEBART, David A.: "Exchange Rates and Purchasing Power Parity: Evidence Regarding the Failure of SFAS No.52 to Consider Exchange Risk in Hyper-Inflationary Countries", **International Journal of Accounting, Fall**, 1985, p.39-51
- [7]-RULAND, Robert G., Douppnik Timothy S.: "Foreign Currency Translation and the Behavior of Exchange Rates", **Journal of International Business Studies**, Volume 19, Number 3, Year 1988, p.461-476
- Aliber, Robert Z., Stickney Clyde P.:** "Accounting Measures of Foreign Exchange Exposure: The Long and Short of It", **Accounting Review**, 1975, p.44-57
- Arpan, Jeffrey S., Radebaugh Lee H.:** "International Accounting and Multinational Enterprises", **John Wiley & Sons**, 2nd Edition
- Chen, Ai Y. S., Comiskey Eugene E., Mulford Charles W.:** "Foreign Currency Translation and Analyst Forecast Dispersion: Examining the Effects of Statement of Financial Accounting Standard No.52", **Journal of Accounting and Public Policy**, Volume 9, Number 4, Year 1990, p.239-256
- Choi, Frederick D. S.:** "Price-Level Adjustments and Foreign Currency Translation: Are They Compatible?", **The International Journal of Accounting**, Fall 1975, p.121-143
- Choi, Frederick D. S.:** "Resolving the Inflation/Currency Translation Dilemma", **Management International Review**, Volume 27, Number 2, Year 1987, p.26-34
- Evans, Thomas G., Taylor, Martin E., Holzmann, Oscar:** "International Accounting and Reporting", **PWS-KENT Publishing Company**, 1988
- Financial Accounting Standards Board:** "Statement of Financial Accounting Standard No.8: Accounting for the Translation of Foreign Currency Transactions and Foreign Currency Financial Statements", October 1975
- Financial Accounting Standards Board:** "Statement of Financial Accounting Standard No.52: Foreign Currency Translation", December 1982
- Financial Accounting Standards Board:** "Statement of Financial Accounting Standard No.70: Financial Reporting and Changing Prices: Foreign Currency Translation"
- International Accounting Standards Committee:** "International Accounting Standard No.21: Accounting for the Effects of Changes in Foreign Exchange Rates"
- Radebaugh, Lee H., Gray, Sidney J.:** "International Accounting and Multinational Enterprises", **John Wiley & Sons Inc.**, 3rd Edition
- Robock, Stefan H., Simmonds, Keneth:** "International Business and Multinational Enterprises", 3rd Edition, **Homewood**, 111.:R.D. Irwin, 1983
- Ruland, Robert G., Douppnik Timothy S.:** "Foreign Currency Translation and the Behavior of Exchange Rates", **Journal of International Business Studies**, Volume 19, Number 3, Year 1988, p.461-476
- Shapiro, Alan C.:** "Multinational Financial Management", **Boston: Allyn and Bacon**, 1982
- Statement of Standard Accounting Practice:** "SSAP 20: Foreign Currency Translation", April 1983

