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EXCHANGE RATE POLICIES AND TRADE IN LITHUANIA:

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EXCHANGE RATE POLICIES AND TRADE IN LITHUANIA

EXECUTIVE SUMMARY

Lithuania's currency, the Litas, has been managed under a currency board arrangement since mid-1994. Plans are now underway to discontinue use of the currency board arrangement in favor of more conventional central bank operations. Expectations about exchange rates and their management should be realistic ones. What it means to say that a currency is "overvalued" or "undervalued" should be understood. How exchange rates affect exports and general "competitiveness" should be clear. The purpose of this paper is to raise and discuss some of the issues involved.

Equilibrium and Real Exchange Rates: An exchange rate can only be said to be "undervalued" or "overvalued" relative to some standard. That standard is the **equilibrium exchange rate**. The concept of the equilibrium exchange rate is discussed and the real exchange rate introduced. The **real exchange rate** is defined as:

(1) RER = (En/Pd)/ (Ef/Pf), where:

En is the nominal exchange rate in Litas per dollar, Ef is the nominal rate in foreign currency per dollar, and Pd and Pf are the domestic and foreign price levels. When the nominal exchange rate is fixed, and prices in Lithuania rise at a faster rate than prices elsewhere, the Litas will appreciate in real terms. When disturbances to the demand for and supply of foreign currency occur, changes will occur in the real exchange rate to restore equilibrium. It is the task of exchange rate management to ensure that equilibrium is indeed restored <u>and</u> to manage that restoration so that it is as painless as possible. The more flexible prices are, the easier task of adjustment is.

The **real effective exchange rate** (REER) is the "average" real exchange rate against all possible currencies to which we wish to compare the Litas. Relevant currencies are those used by countries with which Lithuania conducts a significant amount of trade or other economic interaction. Calculations show that in the aggregate, since 1993, the Litas has depreciated. But almost all depreciation has occurred against currencies of Russia, Belarus and Ukraine. Compared to the currencies of countries other than those, the Litas has generally appreciated (except for the Estonian case).

Is the Litas overvalued? The REER does not speak to the question of overvaluation. Overvaluation can only be determined relative to an equilibrium value. We cannot observe the equilibrium exchange rate directly. However, we can observe the behavior of some of the variables that would be indicators of

overvaluation of a fixed exchange rate. We can look for the signs of overvaluation even if we cannot observe overvaluation directly.

Signs of overvaluation:

- Export growth will slow and in an extreme case of overvaluation, export growth will become negative.
- Import growth will accelerate and, given declining exports, the balance of trade will become increasingly negative.
- The current account of the balance of payments will become increasingly negative
- Capital inflows will slow.
- Foreign exchange reserves will be lost.

On none of these dimensions is overvaluation clearly indicated. There are few signs that the Litas is now overvalued.

Conclusions:

- With a fixed exchange rate, as we have with the Litas, a currency appreciates when prices rise by more than price increases in countries with which economic transactions occur.

- The real exchange rate for the Litas has appreciated against the more stable currencies of Europe and the US, while it had depreciated against those of the former Soviet states. Because of the large weight of the latter in Lithuania's transactions, on average, the Litas appears to have depreciated in real terms.
- An exchange rate can be considered to be "over-" or "under-" valued only relative to the equilibrium exchange rate.
- There is no obvious evidence that the Litas is overvalued at this time.
- While Lithuania has experienced some erosion of its competitiveness since 1993, competitive signs are still generally positive.
- Flexibility helps in the adjustment of real exchange rates to changing external circumstances. Flexibility of wages, interest rates, prices and employment conditions as well as flexibility in allocating capital resources determine the speed and timeliness of adjustment.
- The exchange rate is a macro tool. It is used to bring macroeconomic variables into a sustainable balance. It is not a tool for stimulating exports from any specific sector and is not a tool *per se* for stimulating exports at all.
- Observations of the merchandise trade balance should not be the only or even the main force driving decisions about exchange rate management. Indeed, a negative trade balance is needed to allow investment to exceed domestic savings.

EXCHANGE RATE POLICIES AND TRADE IN LITHUANIA

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Introduction

Lithuania's currency, the Litas, has been managed under a currency board arrangement since mid-1994. Plans are now underway to discontinue use of the currency board arrangement in favor of more conventional central bank operations to manage foreign exchange.[1] As this process occurs, Lithuanians should understand what exchange rate management does for them. Expectations about exchange rates and their management should be realistic ones. What it means to say that a currency is "overvalued" or "undervalued" should be understood. How exchange rates affect exports and general "competitiveness" should be clear. It is the purpose of this paper to raise some of the issues involved and to create a framework around which discussion of exchange rate issues can be organized.

We begin with a discussion of what it means for a currency to be "overvalued" or "undervalued." We then introduce the concept of the "real exchange rate" and present calculations on one of the common real exchange rate indices. Given these tools, we then discuss indicators of "undervaluation" and "overvaluation." In the end, we will see that competitiveness is a complicated economic phenomenon that cannot be addressed by considerations of the real exchange rate alone. Indeed, the role of the exchange rate and exchange rate management is to bring into balance a number of key economic variables.

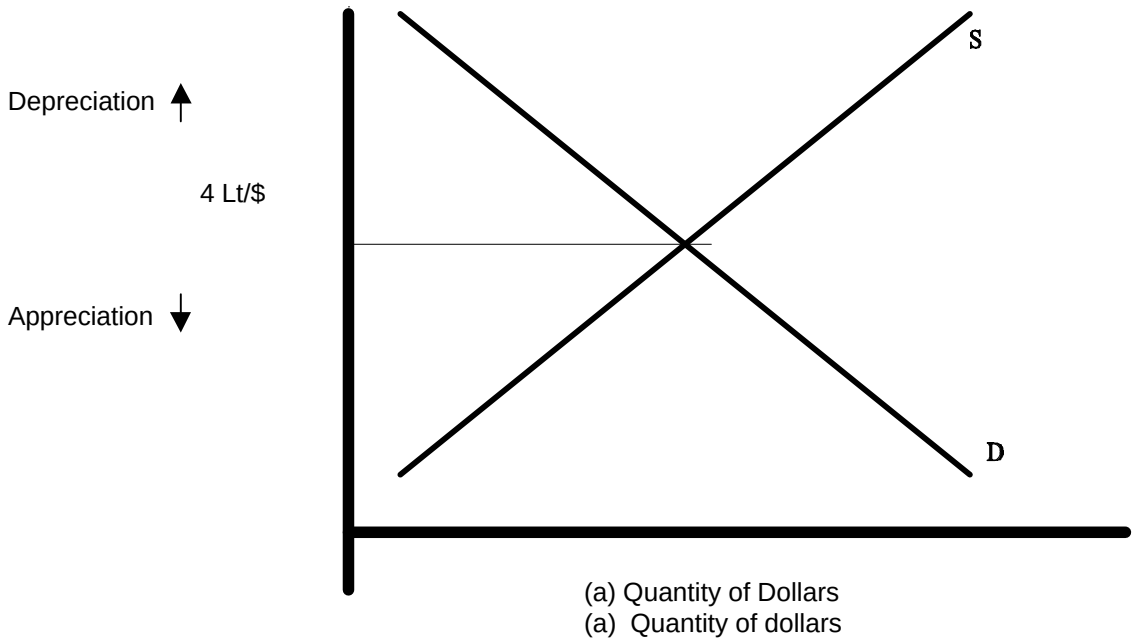
Section 1: Equilibrium and Real Exchange Rates

An exchange rate can only be said to be "undervalued" or "overvalued" relative to some standard. That standard is the **equilibrium exchange rate**, which is the exchange rate that will allow the demand for, and the supply of a currency to be equal. Figure 1a will facilitate the explanation.

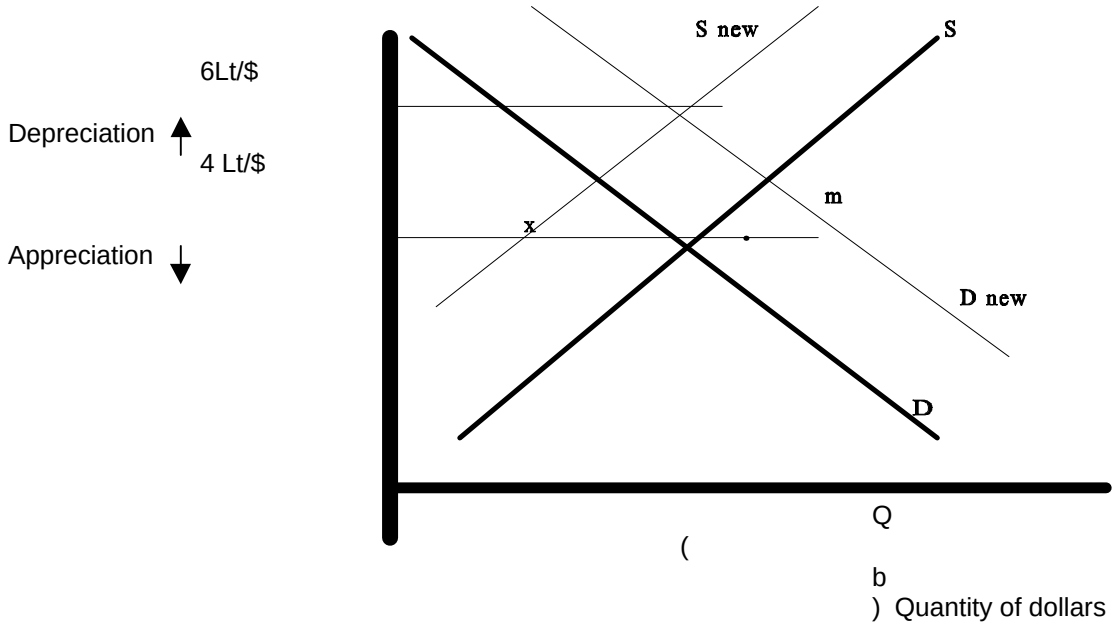
[1] Whether a country should exit from a currency board, and how to do it, is explained by Williamson (1995).

FIGURE 1. Supply and Demand for Foreign Exchange

Price of dollars in Lt/$



Price of dollars in Lt/$



The figure shows two curves depicting the demand for and the supply of foreign exchange. For this discussion we will refer to foreign exchange as “dollars.” The demand for dollars is a demand derived from demands by Lithuanians for all the things that can be done with dollars, such as importing, investing abroad, protecting their savings from domestic risk and so forth. Similarly, the supply of dollars is derived from the desires of those holding dollars to perform transactions that require Litas, such as buying Lithuanian exports, investing in Lithuania, paying salaries of Lithuanians to perform services and the like.

As with other supply and demand relationships, those for foreign exchange have a number of complicated equilibrium relationships standing behind them. For example, the demand for dollars is in part the demand by Lithuanians for imported goods. The demand for imported goods in turn is a function of Lithuanian tastes for imports versus domestically produced goods, per capita income in Lithuania, taxation of imports versus other goods, relative prices of imported goods versus domestically produced goods, and so forth. A change in any of these underlying relationships will likely shift the demand curve. Similarly, there are a great number of assumptions underlying the supply of dollars. Since the supply of dollars is derived from the wishes of those holding dollars to buy Lithuanian exports or to invest in Lithuania, depicting a supply curve like the one in Figure 1 implies many assumptions.

The price of dollars is the **exchange rate**, and the exchange rate that equates supply and demand is the **equilibrium exchange rate**. In Figure 1a we have shown the equilibrium exchange rate that equates supply and demand to be 4 Lt per dollar. This is by assumption and for the sake of the illustration. If a lower price of dollars had been chosen for the exchange rate, say 2 Lt per dollar, given the supply and demand shown, the Litas would be overvalued. If one of the curves shifted, say the demand curve for dollars shifts to the left because Lithuanians have decided to invest more at home than had been the case, then the Litas rate of 4 Lt per dollar would be undervalued.

With any commodity, its price represents the rate at which one gives up money to get that commodity. An exchange rate tells us the rate at which we have to give up the consumption of domestic goods to consume foreign goods. Any rise in the price of dollars is a depreciation of the Litas, because we would have to forego the consumption of more Lithuanian goods in order to consume foreign goods. A drop in the price of dollars is an appreciation of the Litas.

Assume that the equilibrium price of dollars, i.e. the exchange rate is 4Lt = $1, and that this rate has been fixed. The **real exchange rate** is defined as:

(1) RER = (En/Pd)/ (Ef/Pf), where:

En is the nominal exchange rate in Litas per dollar, Ef is the nominal exchange rate in foreign currency units per dollar for the country that Lithuania wants to compare itself

with, and Pd and Pf are the domestic and foreign price levels. At any instant in time, such as that depicted by Figure 1, the price levels are fixed. Consider the exchange rate of Litas with dollars. The real exchange rate is simply the price of a dollar in Litas (in this case 4Lt/$1) and it tells us that we give up consuming 4 Litas of domestic goods every time we decide to consume $1 of foreign goods. The real exchange rate becomes interesting over time. Over time both price levels can change, and change at different rates. As the price levels in the two different places change, the rates at which Litas can be changed into goods in Lithuania changes, and the rate at which dollars can be exchanged for goods in the rest of the world also changes. If the price level in Lithuania doubles, then each Lita buys only one half as much in Lithuania as it did before. In the meantime, if the price level in the US has not changed, and the exchange rate has been fixed at 4Lt/$1, then the Litas still buys the same amount of foreign goods as it did before. Therefore <u>the real exchange rate has appreciated</u>, because at the fixed exchange rate owners of Litas must give up consuming only half as much Lithuanian goods as they did before, to consume the same amount of U.S. goods.

In general, when the nominal exchange rate is fixed, and prices in Lithuania rise at a faster rate than prices elsewhere, the Litas will appreciate in real terms. This is demonstrated in Figure 1b. If we start with the equilibrium situation shown in figure 1a, and over time there is inflation in Lithuania which exceeds the rate of inflation outside Lithuania, some of the assumptions behind the supply and demand curves will have changed, and the curves will therefore shift to represent the new situation. *First*, Lithuanians will find that compared to the original situation, their money buys relatively more outside the country than inside. Therefore, their demand for imports or for investments abroad increases: the demand curve for dollars shifts to the right. *Second*, foreigners looking at Lithuania as a place to buy goods or to invest find it less attractive than before. They now get relatively more for their money elsewhere: the supply of dollars shifts left. The fixed exchange rate is now below the new equilibrium exchange rate. The new equilibrium level, as depicted in Figure 1b, is 6 Lt per dollar. The Litas is overvalued at 4 Lt per dollar. The real exchange rate is now below the equilibrium level.

The Litas will not stay overvalued even if the fixed nominal exchange rate remains at the same level of 4 Lt per dollar. Assuming that the nominal exchange rate is indeed fixed, changes will occur to restore the real exchange rate to its former value. Notice in Figure 1b that at the fixed exchange rate there is a gap between the demand for dollars and the supply of dollars equal to xm. There is an excess demand for dollars. The excess demand for dollars is met by the Central Bank selling dollar reserves to the public. As reserves are lost, the money supply contracts; and as the money supply contracts, inflation slows. If the contraction in the money supply is so great that prices actually decline, then the demand for and supply of dollars start to shift back to their original position. As they shift, the overvaluation decreases, and may be eventually eliminated.

But what if prices cannot decline? In most countries there are institutional barriers to price declines, and Lithuania is no exception. *First*, to shift the supply and demand back to where they were requires that Lithuania's inflation be less than it is in other countries. It is not necessary that prices actually fall. *Second*, if prices were flexible, such that some prices were able to fall, adjustment would be easier. *Third*, if some prices are flexible, then those will adjust to help shift supply and demand. In the example discussed in the last paragraph, the money supply falls. This would provoke a rise in interest rates, which in turn makes Lithuania's financial investments look more desirable than they were previously. Thus, there is a rightward shift in the supply of dollars as people with dollars look more favorably on investments in Lithuania. Indeed, there are likely to be all three of these phenomena occurring at the same time.

In general, therefore, disturbances to any of the conditions underlying the demand for and supply of foreign currency may create an over- or undervaluation of a fixed exchange rate. With a fixed exchange rate price changes will occur, thereby altering the real exchange rate. With a flexible exchange rate prices may remain constant but the nominal exchange rate will change. In either case the real exchange rate will change to restore equilibrium. It is the task of exchange rate management to ensure that equilibrium is indeed restored <u>and</u> to manage that restoration so that it is as painless as possible. The more flexible prices are, the easier the task of adjustment is. Those prices include prices of goods, labor (wages) and capital (interest rates). Table 1 lists several other scenarios leading to over or undervaluation of the exchange rate, and the changes that will take place to restore equilibrium. For comparison, a fixed exchange rate like Lithuania's is contrasted with a floating exchange rate.

TABLE 1: SCENARIOS OF REAL EXCHANGE RATE MOVEMENTS

Capital Inflows:

Capital inflows affect the real exchange rate only to the extent that they are spent on non-tradable goods and services. If the inflow of investment dollars were spent only on the outflow of dollars caused by the current account deficit, then no monetary expansion would occur. Only to the extent that capital inflow is spent on non-tradables will there be monetary expansion. (This assumes no off-setting central bank sterilization.) The supply of dollars shifts to the right.

Floating exchange rate: The increased supply of foreign exchange causes the nominal and real exchange rate to appreciate.

Fixed exchange rate: The increased supply of foreign exchange causes an increase in the general price level. The real exchange rate appreciates.

Increase in the dollar price of exports or reduction in the real production costs of exports:

The supply curve of dollars (foreign exchange) shifts to the right.

Floating rate: The increased supply of dollars causes the nominal and real exchange rate to appreciate.

Fixed rate: The increased supply of dollars is converted by the central bank into Litas at the fixed rate. This leads to monetary expansion and an increase in the general price level. The real exchange rate appreciates.

Increase in the dollar price of imports:

There are two cases. *First*, when the demand for dollars (to be used for imports) is inelastic (that is when importers are relatively insensitive to price), then while the amounts of imports are fewer, the amount spent on them rises. The demand curve for dollars shifts to the right.

Floating rate: The increased demand for dollars leads to a depreciation of the nominal and real exchange rate.

Fixed rate: The increased demand for dollars means that increased amounts of Litas will be exchanged for dollars. There is a contraction of the money supply and general prices fall. The real exchange rate depreciates.

Second, when imports have an elastic demand, it means that importers have such a large response to the price increase that they end up spending less on imports. Then, the demand for dollars shifts to the left. The results are the opposite of those already described.

Reduction or elimination of import duties:

Total expenditures minus import duties represent what importers spend on dollars for imports. When import duties are reduced, importers can buy more imports for the same expenditure in Litas. Thus, the demand curve for dollars shifts to the right.

Floating rate: The increased demand for dollars leads to a depreciation of the nominal and real exchange rate.

Fixed rate: More Litas will be converted into dollars, and the domestic money supply will contract. The general price level will fall and the real exchange rate will depreciate.

Reduction or elimination of export duties:

Lower export duties mean that the outlay required for a given quantity of exports declines. Thus, the supply curve of dollars shifts to the right.

Floating rate: The increased supply of dollars causes an appreciation in the nominal and real exchange rate.

Floating rate: More dollars are converted into Litas, causing monetary expansion. The general price level rises and the real exchange rate appreciates.

Source: This table is an adaptation of Helmers (1988:22-23)

Section 2: Real Effective Exchange Rates in Lithuania

Equation 1 defines the **real exchange rate** between only two currencies, the Litas and the dollar. However, Lithuania has many trade partners, each dealing in their own currencies and each experiencing different rates of inflation. Furthermore, each pursues a different exchange rate regime. Some apply fixed exchange rates (e.g. Estonia), some peg the exchange rate but may adjust it infrequently as circumstances arise (e.g. Latvia), and some have a floating rate (e.g. Russia). Ultimately we are interested in the value of the Litas in a general sense, that is, with respect to all of Lithuania's trade partners. The **real effective exchange rate** (REER) is the average real exchange rate against all currencies to which we wish to compare the Litas. It is impractical to compare the Litas against all currencies, so it has become common practice to compare a currency against all relevant countries' currencies. Relevant currencies are those used by countries with which Lithuania conducts a significant amount of trade or other economic interaction.

Table 2 shows calculations for a bilateral RER for the Lita against the currencies of Lithuania's eleven[2] largest trading partners, plus the US. The bilateral RER compares the Litas with each of the other countries individually. The table also shows REERs for the Litas against the collection of currencies shown. The REER is a weighted average of the bi-lateral RERs. Data are shown from 1993, the year in which the value of the Litas was first fixed and the year before the currency board was formed. The RERs and REER are shown as indices, with the base year 1993. A decline in the index signals an appreciation of the Litas, while a rise signals a depreciation. "Appreciation" and "depreciation" in this contest are only relative to what the real value of the Litas was in 1993, the base year. There is nothing about the index itself that indicates what the exchange rate "should be."

Calculation of the REER requires that the bilateral RERs be weighted so that the indices can be added. We have used two alternative weighting systems.[3] Weighting #1 is simply the proportion of group exports accounted by each country in 1996. Under this system, the U.S. dollar receives very little weight because only about 1% of Lithuania's exports go to the United States. There is a problem in weighting the U.S. dollar so lightly. Many contracts are specified in dollars, and many international traders use the dollar and dollar prices as the basis for making international comparisons. It seems reasonable to weight the dollar more heavily than group export weights would imply. Thus, as an alternative, weighting #2 weights each country except the U.S. by their proportion in total Lithuanian exports. The U.S. dollar is given a weight equal to

[2] These eleven were chosen because they occupy at least 2% of Lithuania's exports and imports. Including a few more or less in the list would affect the REER calculations very little.

[3] Weighting is always one of the difficult decisions to be made in REER calculations. Weighting is also controversial. See Lipschitz and McDonald (1991) for a discussion.

the proportion of Lithuania's exports not accounted for by the other eleven countries.

No matter the weighting system, the REER index rises, implying a depreciation of the Litas. The REER rises to 3.42 by 1996 with weighting #1 and to 2.91 using weighting #2. The reason for the apparent depreciation of the Litas is due to the exchange rate and price behavior in Lithuania's largest export markets. Russia, Belarus and Ukraine together account for over 41% of Lithuania's exports, and they are therefore weighted heavily in the REER computation. Each of these countries has experienced extreme inflation and nominal devaluation. However, in each of those cases the rate of devaluation has been much less than the rate of inflation. Thus the currency of each has appreciated in real terms relative to the Litas. Indeed the rate of real appreciation of these three currencies has been extreme. The REER for the Litas weights these currencies heavily, causing the overall result to show a depreciation of the Litas.

Compared to the currencies of countries other than Russia, Belarus and Ukraine, the Litas has generally appreciated. Except for the Estonian case (where there has been slight depreciation), the Litas has appreciated by about 25-50%. Obviously this is due mainly to higher inflation in Lithuania than in the other countries. Recently, some of the appreciation is also due to an appreciation of the U.S. dollar, to which the Litas is tied.

The real value of the Litas has been affected by two very different forces. On the one hand, trade partners to the East have not obtained the stability of Lithuania. They have allowed inflation to become extreme and have allowed their currencies to appreciate in real terms. If we were to calculate a REER for the Litas against only the three currencies of Russia, Belarus and the Ukraine, that REER would be about 6, indicating very great <u>depreciation</u> of the Litas in terms of those three currencies.

TABLE 2: REAL EXCHANGE RATE INDICES

	1993	1994	1995	1996	x share
RER with:					in %
Russia	1.000	2.291	4.605	7.736	23.8
Germany	1.000	0.788	0.687	0.550	13
Belarus	1.000	0.989	3.546	3.643	10.1
Latvia	1.000	0.884	0.786	0.736	9.3
Ukraine	1.000	0.956	2.112	4.542	7.7
U.K.	1.000	0.747	0.598	0.572	3.4
Netherlands	1.000	0.796	0.684	0.548	3.2
Poland	1.000	0.785	0.759	0.665	3.2
Italy	1.000	0.707	0.586	0.556	2.6
Denmark	1.000	0.785	0.684	0.556	2.6
Estonia	1.000	1.143	1.240	1.199	2.5
US	1.000	0.700	0.565	0.493	1
					82.4
REER					
X weights #1	1.000	1.279	2.324	3.424	
X weights #2	1.000	1.177	2.015	2.908	

On the other hand, Lithuania conducts about 60% of its trade with countries to the west and the other Baltic states, which have much better macroeconomic stability currencies of those countries, the index would be about .6, indicating about a 40% real appreciation of the Litas. What can we conclude? Has the Litas appreciated or depreciated in real terms? The conclusion must be that the Litas has not appreciated in real terms and has probably depreciated on balance.

Section 3: Is the Litas overvalued?

Information on the REER tells us that the Litas has appreciated against many currencies since 1993. Does this mean that the Litas is overvalued? The short answer is, no, it does not.[4] It is the interaction of all transactions that constitutes the supply and demand for a currency, and several important trade partners of Lithuania have had appreciating currencies. Overvaluation can only be determined relative to an equilibrium value, as it was when we examined Figure 1b. If we had all the information supporting the supply of and demand for dollars, we could examine those relationships, as we did in Figure 1b, and determine whether or not the Litas was over- or undervalued. Unfortunately, we have few of the data required to draw the supply and demand curves. If we tried to fill in the relationships shown in Figure 1b, using known Lithuanian data, the figure would appear only as a horizontal line representing the exchange rate of 4 Lt per dollar. None of the other relationships can be observed. We cannot observe the equilibrium exchange rate directly. However, we can observe the behavior of some of the variables that would be affected by under- or overvaluation of a fixed exchange rate.

Table 1 indicates some of the **signs of overvaluation**. If a fixed exchange rate is overvalued, some or all of the following observations will be evident:

- Export growth will slow and in an extreme case of overvaluation, export growth will become negative.
- Import growth will accelerate and, given declining exports, the balance of trade will become increasingly negative.
- The current account of the balance of payments will become increasingly negative
- Capital inflows will slow. Of particular importance are capital flows that are motivated by free market conditions. If investors are responding to pure market forces and are investing (or not investing) in accordance with their evaluations of the fundamental economic conditions in the country, a slowing (or reversal) of capital inflows may indicate currency overvaluation.
- Foreign exchange reserves will be lost.

[4] The use of the REER to indicate whether or not a currency is overvalued (or undervalued) is not without controversy. Use of REER in this way assumes that over the long run identical goods will command identical prices in all places. Also, there are several REER concepts that one could use other than the one shown. To begin to see the controversies, see Marsh and Tokarick (1994).

Let us consider each of these points in turn. *First,* we must examine the behavior of **exports** and the **balance of trade.** Table 3 shows data on Lithuania's exports, imports, and balance of trade for 1994-96. During 1996, the Department of Statistics changed the method for accounting for imports. The new method was extended backwards to 1995 but not to 1994. Thus, one can compare exports and imports by the new method for 1995 and 1996, and compare 1994 and 1995 by the old method. Both of these are shown in the table. From these, rates of change for both exports and imports can be calculated, and these are shown in line 3. Note that exports grew strongly in both 1995 and 1996, though the rate of growth slowed in 1996. However, in both years the rate of growth of exports exceeded the rate of growth of imports, so the trade balance experienced a relative improvement[5] in both years. Furthermore, the rate of growth of imports declined, which is the opposite of what one would expect from an overvalued exchange rate. Thus, the signals that we get are not those of an overvaluation. There may be some worrying signs that export growth is slowing, but signs on the trade balance and on import growth do not indicate overvaluation.

TABLE 3: EXPORTS AND IMPORTS, 1994-96 (million Litas)

	1994		**1995**		**1996**	
	Exports	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**
New method			10,820	14,594	13,119	17,618
Old method	8,077	9,355	10,826	12,330		
Change			34%	31.8%	21.2%	20.7%
Special			8,157	12,053	10,403	14,997
Change					27.5%	24.4%

The Department of Statistics publishes "special" trade figures that adjust for items imported to Lithuania but then re-exported. Such items never leave the customs warehouse, and do not represent either "imports" or "exports" of Lithuania. These special figures are available only for 1995 and 1996. In this case, between 1995 and

[5]One might observe that the negative trade balance increased in absolute size. This is almost an arithmetic necessity. For the absolute trade gap to remain constant, exports would have to grow faster than imports because the base for exports is smaller than it is for imports. In 1995, exports are only 74% of imports, thus for the absolute trade gap to remain the same, exports have to grow at least (1/.74)=1.35 times the rate of growth of imports.

1996, and on the basis of "special trade" figures, exports grew by 27.5% and imports by 24.4%. Again, these are not figures that would indicate an "overvaluation problem."

How much faith should be put in the import and export figures? Many people would agree that the "gray economy" in Lithuania is very large and that many exports and imports go unrecorded. Dr. E. Maldeikis and his colleagues at the Economic Research Center (1996) estimate the underground economy in Lithuania at about 40% of GDP in 1995. Kaufmann and Kaliberda (1996) come up with a figure of about 30% in 1994. It is not a criticism of the Department of Statistics to say that they cannot report data that are never collected. Meanwhile, the Customs Department recognizes that many transactions are now outside their control. Many import and export transactions go unrecorded. Thus, not too much should be made of reported trade statistics *per se*.

As a result of these problems, data on trade are often inconsistent. For example, the exports of Lithuania to country X should be equal to the imports of country X from Lithuania.[6] However, these so-called "mirror statistics" are usually inconsistent. For example, the Department of Statistics reports on trade among the three Baltic countries. Estonia's and Latvia's imports from Lithuania should be roughly equal to Lithuania's exports to them, and Lithuania's exports to them should be slightly smaller than the import figures recorded by Estonia and Latvia, due to insurance and freight. However, in 1995, Estonia's and Latvia's imports are reported to be $152 million; Lithuania's exports to Estonia and Latvia are reported to be $251 million. Not only is there an unexplained difference of 60% between these figures, but Lithuania's exports to the other two countries should be lower than their import figures. This data problem is common for Lithuania. Mirror statistics with most other countries are also inconsistent (see Cicinskas, Cornelius and Treigiene, 1995). Therefore, confidence in the trade statistics is not very high. Important decisions about policy, including decisions about exchange rate management, should not rely upon these data alone.

Second, we should examine **the current account of the balance of payments.** There are some signs that the trade balance may not be as severely negative as it appears in the trade data. Trade data are collected "from the bottom up," and in Lithuania many transactions are missed along the way. In Lithuania, exports and imports are the main components of the current account of the balance of payments. The current account records the balance of all trade in goods and services, in which the trade balance dominates. For example, in 1995, while the balance of trade as calculated by the Bank of Lithuania[7] (BOL) was –2,791 million Litas, the current account balance was –2,457

[6] These figures should differ only in so far as exports are measured f.o.b. and imports c.i.f. Insurance and freight should be a fairly small and consistent part of trade transactions.

[7] BOL figures for exports and imports are not the same as those produced by the Department of Statistics. The Department of Statistics does not produce a balance of payments statement and therefore when considering broader trade concepts, such as the current account, we are restricted to examining the BOL data.

million Litas because of the positive balance (+334 million) in the non-merchandise accounts within the current account.

Monetary surveys and national income accounts take a "top-down" approach and produce figures against which one can cross-check data on the current account. There should be consistency between the current account and monetary figures that are aimed at measuring the same thing. The top-down approach has an advantage in that it does not matter whether economic activity is open and legal or hidden. The overall results show up in the top-down figures. Following the monetary survey and national income accounting, it can be shown that the following relationships hold.

- The current account balance equals the change in net foreign assets held by the banking system, since all current transactions must be paid for in some way. When the current account is in deficit, it is implied that net foreign assets will decline. During both 1995 and 1996, net foreign assets of the banking system rose. During the first quarter of 1996, net foreign assets fell, but this is clearly associated with the banking crisis that first became public in December 1995. After the first quarter of 1996, net foreign assets resumed their rise. This information is inconsistent with the notion that the current account was in deficit during those years. If the monetary data are correct, then it is likely that the trade balance was much more favorable than the Department of Statistics data indicate. Even if there are also errors in the monetary data, the size of the current account deficit must be called into question.

> The current account balance equals total receipts in an economy, minus total expenditures (E). Total receipts come from either production (GNP) or from net transfers (NTR). Therefore:
>
> 1) $CA = GNP + NTR - E$
>
> Total income (GNP + NTR) can be either consumed (C), paid in taxes (T) or saved (S). Therefore:
>
> 2) $GNP + NTR = C + T + S$
>
> Expenditure may be made either as consumption, as government consumption (G) or as investment (I).
>
> 3) $E = C + I + G$
>
> Substituting 2) and 3) in 1) and rearranging yields:
>
> 4) $CA = (S-I) + (T-G)$
>
> That is, the current account balance equals the sum of private savings and public savings. This follows Dornbusch's presentation (1988:43)

- The current account balance of the balance of payments equals the sum of private savings plus government savings. For 1995, while the current account balance is reported to be –2,457 million Litas, net savings was only -456.5. If indeed net savings is as reported, then the current account balance must be much less negative than is reported. If that is the case then the trade gap (the main part of the current account balance) must be much smaller than is commonly thought.

Third, when an exchange rate is overvalued, **capital inflows** normally slow and may become negative. Primary reasons for this are several. Investors may anticipate a devaluation and would not want to be holding the domestic currency when it does devalue. As a currency becomes overvalued, investors find that opportunities elsewhere become more attractive as expenditures of foreign exchange buy less and less in the country of the appreciating currency. Finally, countries with overvalued currencies may try to avoid devaluation by applying administrative controls. The threat

of these controls increases risk for investors. Thus, if the Litas were overvalued we would see a decline in capital inflows, particularly private inflows. We do not observe this. Indeed, during both 1995 and 1996, private capital inflows increased. According to IMF data, between 1995 and 1996, private capital inflows increased from $135 million to $224 million.

Finally, **foreign exchange reserves** have increased in every year since the Litas was fixed in 1993. However, foreign exchange reserves increased by only $19 million in 1996, compared to $158 million in 1995. But borrowing was less in 1996 than in 1995 as well. While reserve accumulation declined by $139 million, borrowing declined by $168 million from what those levels were in 1995. Indeed, between 1995 and 1996 there was a change in the kind of borrowing, from short-term to long-term. Net short-term credits to Lithuania fell by $191 million in 1996, while long-term loans rose by $257 million. It is clear that borrowing affects the outcome in reserve accumulation. What is less clear is that there is any loss of reserves that could be attributed to exchange rate overvaluation.[8]

In short, there are few signs that the Litas is now overvalued. The behavioral characteristics that one would expect to find in a situation of overvaluation are generally not found in Lithuania. To base judgements of over- or undervaluation on the trade balance alone is insufficient. Furthermore, the trade balance that we can observe is unreliable. There are many unrecorded transactions, and measurement error occurs even on the transactions that we can observe. Simple observations on the trade balance cannot show that overvaluation exists.

Section 4: Observations on competitiveness

The true purchasing power of a currency is not always represented by price indices and exchange rates. Price indices are calculated relative to different "bundles" of items in each country, and different base periods prevail. The surveys that collect price index information vary widely in quality. Similarly, exchange rates are determined by all international transactions operating simultaneously, but goods and services that are non-traded have little influence. International transactions related to goods are only a small part of the transactions that determine an exchange rate.

Because of this, methods have been developed to measure "purchasing power parities" (PPP) across countries. These methods identify an identical bundle of goods for countries being compared and adjust for quality, quantity and price. These "bundles" contain non-traded goods and services. A PPP comparison tells us, relative to some base country, how much the currency of the base country can actually buy relative to what it can buy in the base country. The PPP procedure takes into account differences in quantity and quality[9] as well as price. A major project by Eurostat (1996)

[8] We consider these comments about debt to be preliminary ones. A full analysis of Lithuania's debt situation, and the sustainable level of debt is beyond the scope of this paper. Guigale's (1997) comments should be a starting place for an analysis of debt in Lithuania.

[9] For example if Austria is the base country, when one buys an article of clothing in Austria, say a shirt, its average quality may

compared GDP across 39 countries for 1993, using PPP methodologies with Austria as a base. It was found that in 1993 in Lithuania, one could buy more than five times what one would expect to buy in Austria at the then-existing exchange rate. In short, the Litas of 1993 seemed very undervalued relative to the Austrian Shilling. Since 1993, the real value of the Litas for internal use has depreciated through inflation while the nominal exchange rate with the Austrian Shilling has changed little. (The Austrian Shilling has appreciated about 10% against the dollar.) The internal inflation in Lithuania since 1993 (about 120%), plus a 10% appreciation of the Austrian Shilling, would not be enough to remove the undervaluation that the PPP index seemed to indicate. On a PPP basis, one might still be able to buy about 2.8 times as much in Lithuania as one would expect given the exchange rate alone.

It is not entirely legitimate to say that the PPP comparisons show an undervalued Litas, nor that Lithuania's competitiveness is demonstrated. Nevertheless, the price differences between Lithuania and the west (i.e. as represented by Austria) appear very large. Those price differences have narrowed over the past four years, but they have not disappeared.

Real wages and wage behavior in general play an important part in many discussions of competitiveness (See Marsh and Tokarick, 1994). By most international standards, wages in Lithuania are low. Also, nominal wage increases over the past several years have not greatly outpaced general price increases. Thus, there has been no significant real wage escalation. Data published by the Department of Statistics indicate that average monthly gross wages and salaries of employees in the "national economy" have grown in nominal terms by about 36% per year since January 1, 1994. At the same time producer prices have increased at an annual rate of about 30%. Thus, real wage increases have amounted to only about 5% per year, or about a 16% increase over the past three years. The average monthly gross wage as of the end of 1996 was still only 774 Lt. Labor productivity at that wage remains an open question, but the wage gap between Lithuania and Western Europe or the U.S. leaves considerable room for accommodating lower Lithuanian productivity. Whatever wage advantages Lithuania had at the beginning of the fixed exchange rate period have not been greatly eroded during the intervening period.

Section 5: Observations on policy

It is unlikely that an inappropriate exchange rate is a problem for Lithuania at this time. Some exporters or potential exporters may feel that if the exchange rate were devalued they would be more competitive internationally. For some, this may be true. However, we should keep in mind that the exchange rate is a macro tool. It is used to help bring macroeconomic variables into a sustainable balance. It is not a tool for stimulating

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be different from the average shirt sold in Lithuania. The researcher asks how much the same shirt would cost. Or, when one rents a flat in Austria, it is a different flat than is normally rented in Lithuania. The Austrian flat may be larger and have more amenities. The researcher asks how much the Austrian flat would cost if it were rented in Lithuania. Alternatively, one can ask how much Lithuanian goods, as normally consumed in Lithuanians, would cost if acquired in Austria.

exports from any specific sector and is not a tool *per se* for stimulating exports at all. Furthermore, if the exchange rate were devalued, and if it were not overvalued in the first place, macroeconomic adjustments would occur which would affect the real exchange rate. Those changes would restore the original real exchange rate and any gains that exporters would experience initially would be eliminated. In the short run some exports may be stimulated by setting an undervalued exchange rate. In the long run any such effect will be quickly offset by appreciation of the real exchange rate. Stimulating exports over the long run by maintaining a permanently undervalued currency implies that continuous devaluations would have to occur. Each devaluation would lead to price increases that would restore the equilibrium real exchange rate. New devaluations would be needed to create a new undervaluation. Such a policy would promote an inflation/devaluation cycle: a very risky proposition.[10]

Where to look for appropriate policy to improve upon the trade balance, and particularly the current account balance is suggested by the equations in the text box above. Following Dornbusch (1988):

- Current account deficits are caused by expenditures that exceed income. To correct such a deficit, expenditures must be cut and/or income must be expanded. Equation 4 must be kept in mind when evaluating policy positions.
- The current account balance cannot be expected to improve in any permanent fashion unless savings rise relative to investment (S - I) and/or if the government budget deficit improves (T - G).
- Change in the government budget deficit (T - G) has a direct impact on the current account balance. Any increase in the government budget deficit will cause a deterioration in the current account balance unless it is offset by an increase in savings relative to investment.

These simple equations help us identify the source of a current account problem. What is often assumed to be a trade problem is in fact a problem of excess expenditure relative to income. In that imbalance the government deficit plays a key role.

Section 6: Conclusions

- With a fixed exchange rate, as we have with the Litas, a currency appreciates when prices rise by more than price increases in countries with which economic transactions occur.
- The real exchange rate for the Litas has appreciated against the more stable currencies of Europe and the U.S., while it has depreciated against those of the

[10] Even the Asian "tigers" have not successfully used undervalued currencies to stimulate growth, though on occasion they have tried to do so. Rather, they have pursued policies to make sure that currencies do not become overvalued. Most have used monetary expansion and low interest rates to attract foreign investors, combined with devaluations to keep real exchange rates from appreciating. In addition, these countries have not allowed the labor market freedoms that are common in other countries, including Lithuania. Maintaining flexible wage and employment policies has helped keep real exchange rates from appreciating. Recently, exports and growth have slowed considerably for these countries as regulatory, financial and other structural problems have become constraints. (See The Economist, March 1-7 1997).

former Soviet states. Because of the large weight of the latter in Lithuania's transactions, on average the Litas appears to have depreciated in real terms.

- An exchange rate can be considered to be "over-" or "under-" valued only relative to the equilibrium exchange rate.
- There is no obvious evidence that the Litas is overvalued at this time.
- While Lithuania has experienced some erosion of its competitiveness since 1993, competitive signs are still generally positive.
- Flexibility helps in the adjustment of real exchange rates to changing external circumstances. Flexibility of wages, interest rates, prices and employment conditions as well as flexibility in allocating capital resources determine the speed and timeliness of adjustment.
- The exchange rate is a macro tool. It is used to bring macroeconomic variables into a sustainable balance. It is not a tool for stimulating exports from any specific sector and is not a tool *per se* for stimulating exports at all.
- Observations of the merchandise trade balance should not be the only or even the main force driving decisions about exchange rate management. Indeed, a negative trade balance is needed to allow investment to exceed domestic savings. Without a negative trade balance, there is no means for Lithuania to acquire more capital than it is capable of generating out of its own domestic resources, and little means for bringing new technology and/or capital goods to the country via private investment.

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