The Flexible Model, Gold Dinar and Exchange Rate Determination. An Exploratory Study – Part I

Written by:
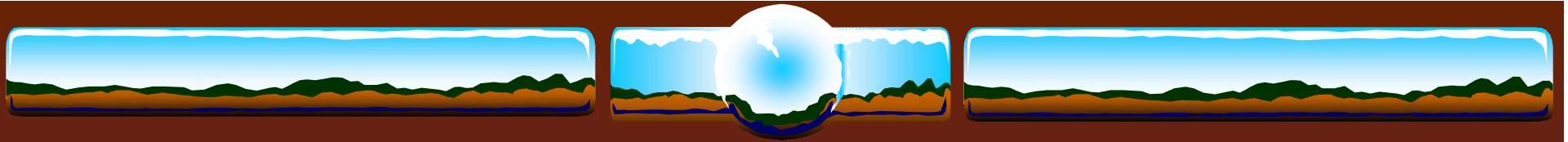
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PRESENTATION OUTLINE

❖ Introduction

❖ Assumptions of the Model

    ❖ Monetary Model _ Flexible Price

    ❖ The Monetary Model With a Full Swing Dinar Economy

    ❖ Domestic Monetary Expansion

INTRODUCTION

❖ Issue: Malaysia is promoting the usage of Gold Dinar as a payment settlement in international trade as a platform of unity between OIC countries. In respond,

❖ Aims:

  ❖ To investigate the *consequences* of using the Gold Dinar as a medium of exchange partially and entirely using the flexible model assumptions

  ❖ Investigate its impact to the flexible model as an exchange rate determination.

  ❖ Evaluate whether the Gold Dinar could play its role as a medium of exchange or money.
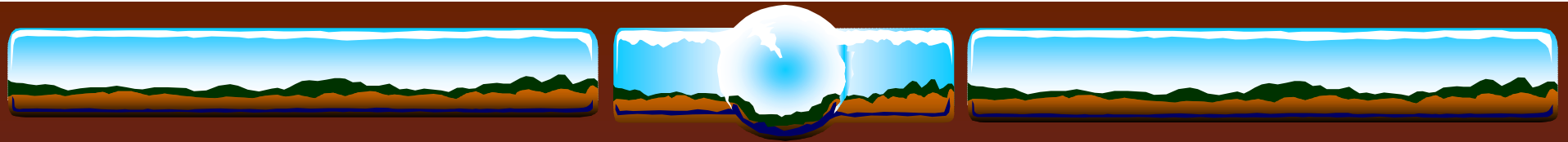
INTRODUCTION

❖ Three Basic Roles of Money

❖ Medium of exchange

❖ As a store of value

❖ As a unit of account

❖ Problems created by fiat money

❖ As a store of value

❖ As a unit of account
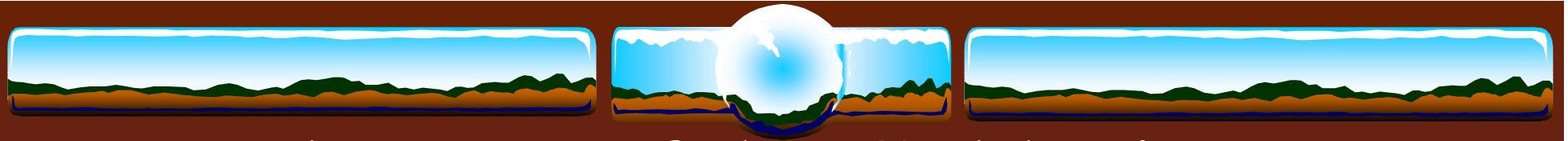
The uses of the Gold Dinar

1. For bilateral and multilateral payment settlement
2. For savings because they are wealth in themselves.
3. For paying Zakat and dowry as established within the Islamic law (Nuradli R.S. at el, 2004)

Problem As a Storage of Value

Title: Annual Average RM/USD from 1990 to 2003

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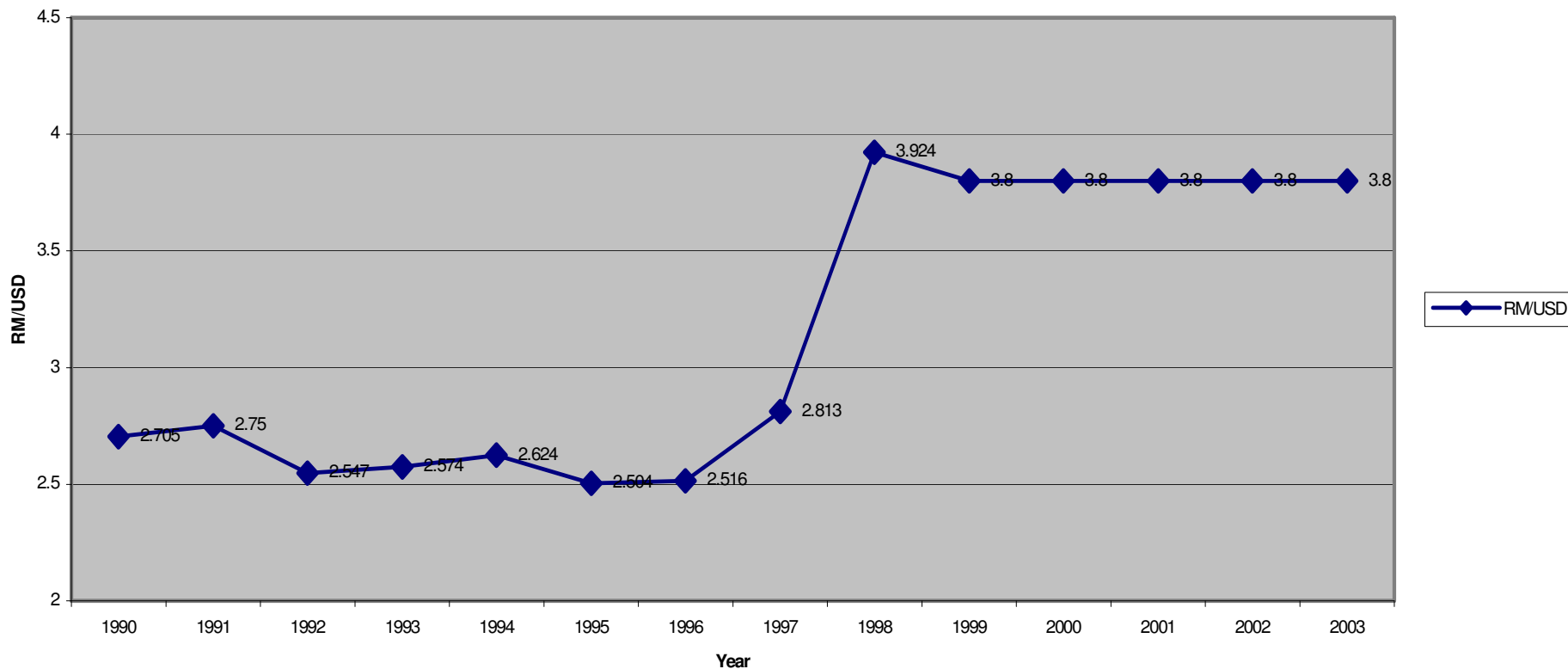
Note: Data collected from International Financial Statistics Online

Problem As a Unit of Account

- Issue: Money Supply (M) can be increased without limit
- Problem: Increase in M beyond the increase in economy's output leads to corresponding reduction in the quantity of wealth.
- Changes in the quantity of goods represented by currency corrupts accounting process and all economic transactions that are spread over time
- It is therefore a clear case of fraud exactly similar to the fraud that results due to manipulation of weights and measures.
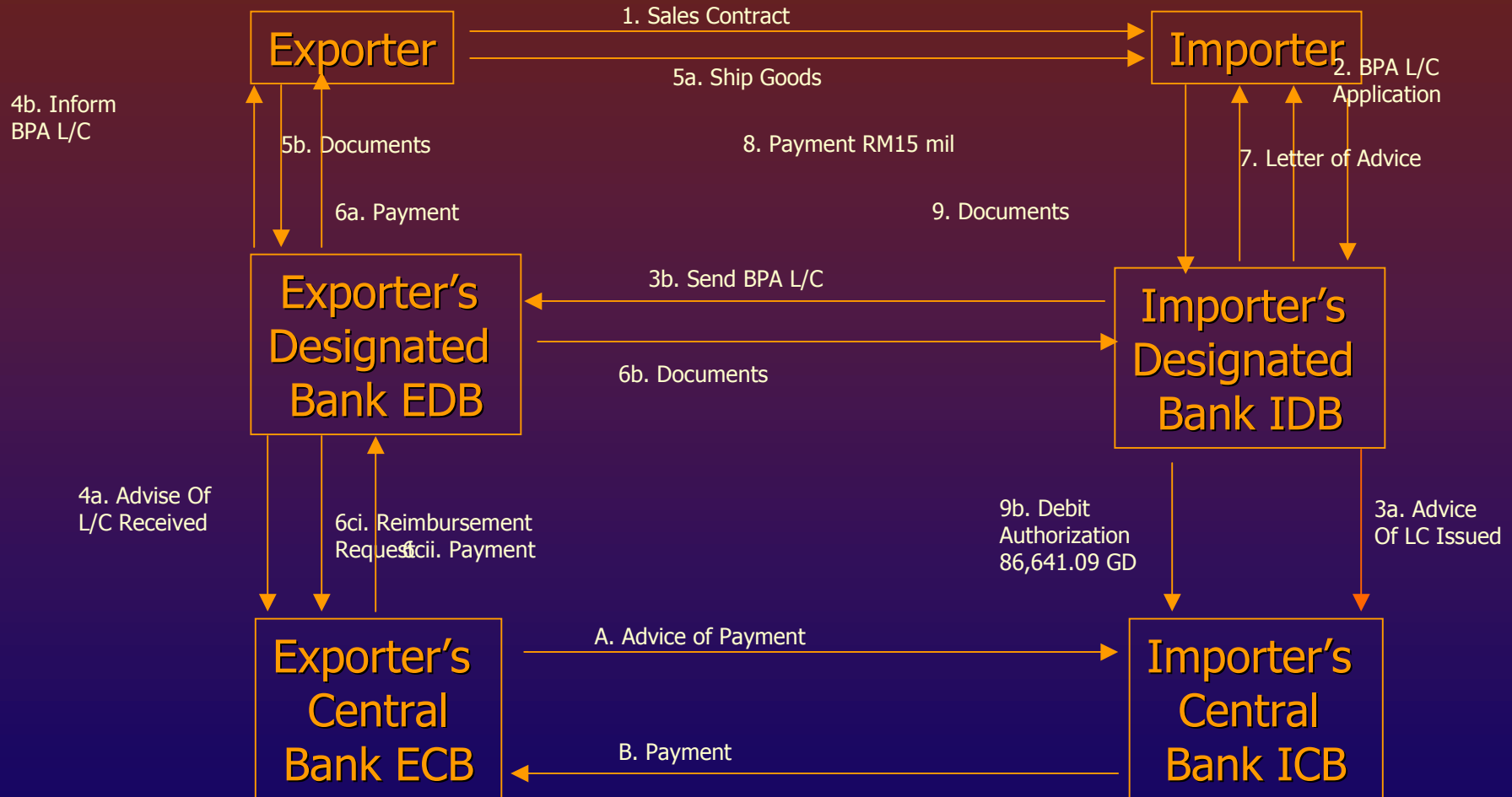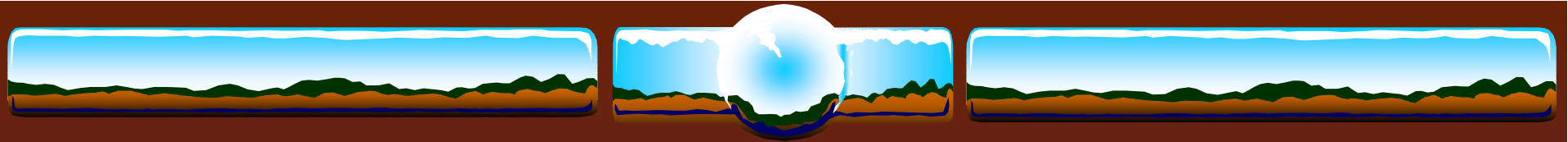
Gold Dinar as a solution?

❖ The Uses of Gold Dinar

➢ Bilateral Payment Arrangement (BPA)

➢ Multilateral Trade Arrangement (MPA)

1. For bilateral and multilateral payment settlement

2. For savings because they are wealth in themselves.

3. For paying Zakat and dowry as established within the Islamic law

BPALC PROCESS

Exporter — 1. Sales Contract → **Importer**

5a. Ship Goods →

Exporter — 2. BPA L/C Application

4b. Inform BPA L/C

5b. Documents

6a. Payment

8. Payment RM15 mil

7. Letter of Advice

9. Documents

Exporter's Designated Bank EDB

3b. Send BPA L/C ←

6b. Documents →

Importer's Designated Bank IDB

4a. Advise Of L/C Received

6ci. Reimbursement Request   6cii. Payment

9b. Debit Authorization 86,641.09 GD

3a. Advice Of LC Issued

Exporter's Central Bank ECB

A. Advice of Payment →

B. Payment ←

Importer's Central Bank ICB

Why International Trade Only?

1. Might affect one economy if it is not done correctly.

2. Could promote trade among OIC countries.

3. The platform for the unity of the OIC countries

4. To avoid a massive disrupts to the overall economy because as the demand of Gold increases the prices of other currencies will decrease (Nuradli RS at el, 2003).
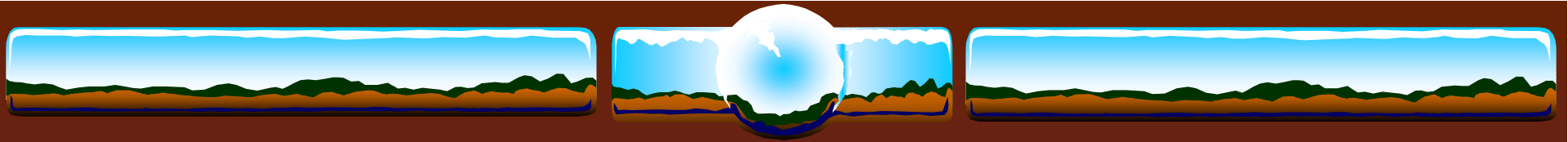
Assumptions Of The Model

1) Two countries, home and foreign.

2) A flexible (bilateral) exchange

3) Agents consist of: producer, user, central bank, etc have perfect foresights i.e. producer can predict the price movement

4) All prices are flexible however in a full swing Gold Dinar environment prices in terms of gold Dinar tend to be very stable and general change in prices will tend to be minor and rare.

5) Absolute Purchasing Power Parity (PPP) holds continuously. The domestic and foreign price of the same commodities will always be equal.

6) Uncovered Interest Parity (UIP) holds.

7) Gold Dinar will become a portion of M1.

8) Gold Dinar would be excluded in the money multiplier.

9) A full swing Dinar economy would eliminate interest from the economy

Flexible Model

❖ PPP holds if s' = sP*/P = 1 where:

s : nominal exchange rate
s' : real exchange rate
P* : foreign price level
P : domestic price level
So, sP*/P = 1 which mean s = P/P*

❖ Or, in log form s = p – p* where:

s : natural log of nominal exchange rate

p* : natural log of foreign price level

p : natural log of domestic price level
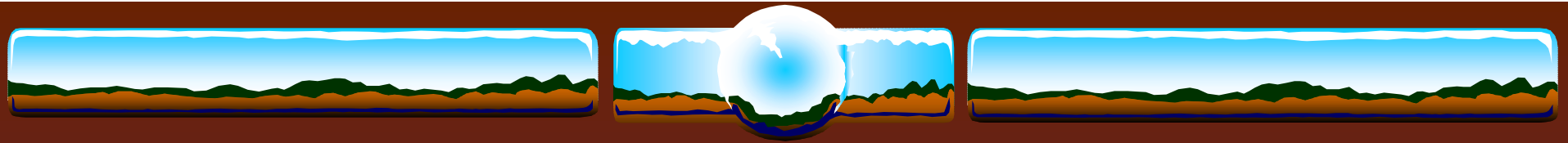
$$s = p - p^* \qquad (1)$$

Flexible Model

Monetary equilibria in the domestic and foreign country

$$m = p + \alpha_2 y - \alpha_3 i \qquad (2)$$

$$m^* = p^* + \alpha_2 y^* - \alpha_3 i^* \qquad (3)$$

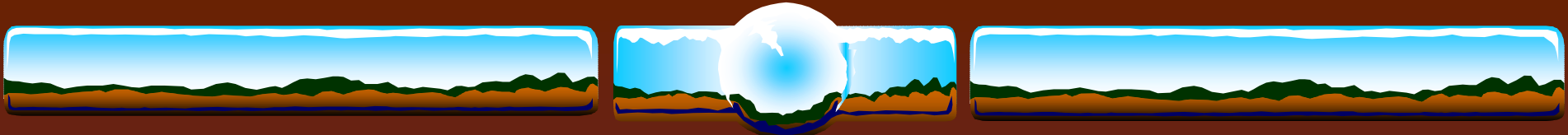❖ Rearranging equation (2) and (3) for domestic and foreign price levels and substituting into equation (1)

Flexible Model

Model of exchange rate equation of Bilson (1978), Frankel (1978) and Hodrick (1978)

$$s = m - \alpha 2y + \alpha 3i - (m^* - \alpha 2y^* + \alpha 3i^*)$$

$$s = (m - m^*) - \alpha 2(y - y^*) + \alpha 3(i - i^*)$$

The Monetary Model With a Full Swing Dinar Economy

- $p = p^*$ (1)
- $S^e - S = i - i^*$ (2)
  - S^e = Expected exchange Rate
  - S = Spot Exchange Rate
  - i = Interest rate in home country
  - i^* = Interest rate in Foreign Country
- $(S^e - S)/S = 0$

The Monetary Model With a Full Swing Dinar Economy

❖ M/P = Yt ^ α (1 + i)^-β _ Money Mkt Equib

❖ However in a full swing Gold Dinar economy (1 + I)^-β = 1, therefore M/P = Yt ^ α

❖ In order to neutralize the power, we change the equation to log form and we get;

❖ m – p = αy

❖ Or p = m – αy   (3)

❖ Substitute (1) in (3) we will get

❖ *p* = m – αy*   (4)

The Monetary Model With a Full Swing Dinar Economy

- $sP*/P = 1$ PPP
- $Or, sP* = P$ $\rightarrow$ $s = p - p*$ (log form)   (1)

- $(S^e - S)/S = i - i*$ UIP   (2)
- $p = m - \alpha y$ domestic price level   (3)
- $p* = m* - \alpha y*$ foreign price level   (4)
- Substitute (3) and (4) to (1):
- $s = m - \alpha y - (m* - \alpha y*)$
- $Or, s = m - m* - \alpha(y - y*)$ (5)
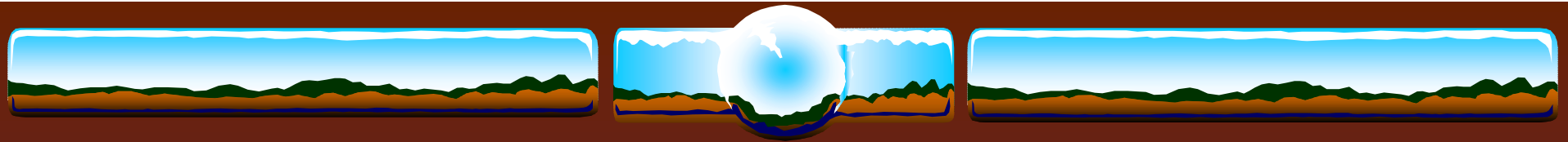
Domestic Monetary Expansion

❖ Considering high stability of Dinar, there will be minor changes in price level. There will be increase in investment as well as consumption and therefore there will be increase in export as well as imports. Over all growth will depend upon what part of this increased wealth is consumed for satisfying Tahsinaat and Taazianat (improvements and embellishments) and what is consumed for satisfying necessities and needs and for investment. If there is a monetary expansion of the domestic money supply m, i.e. discovery of gold mines, m will increase and in order for PPP to hold $p=sp^*$, and since s will always equal one, y the domestic output will increase if all other variables are held constant.
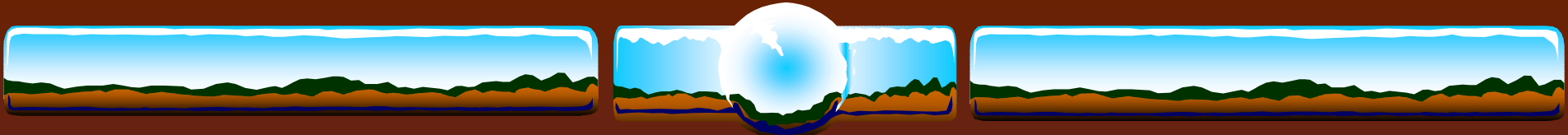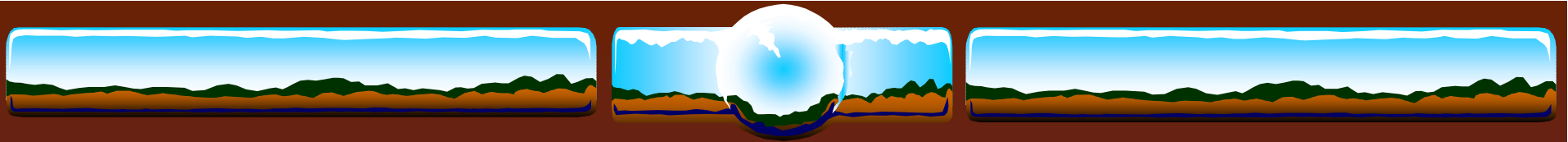
Example: Simulation

$$s = m - m^* - \alpha(y - y^*)$$

m	40
m*	50
alpha	0.5
y	
y*	10
y	-12

m	50
m*	50
alpha	0.5
y	
y*	10
y	8

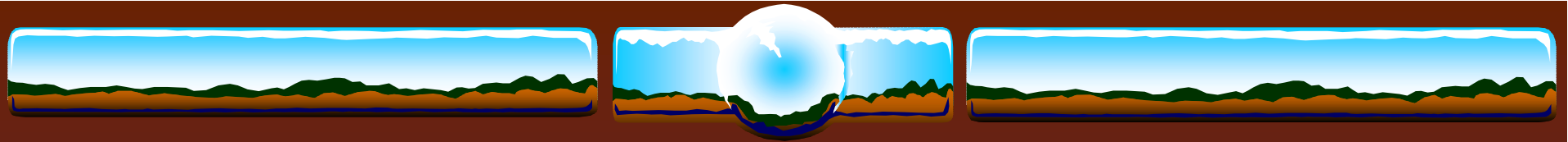| m	60
m*	50
alpha	0.7
y	
y*	10
y	22.85714

To be Continued

The Flexible Model, Gold Dinar and Exchange Rate Determination. An Exploratory Study – Part II

Modeling:

The Monetary Model With A Fraction Of Dinar Economy

❖ Flexible Model

> ❖ Research Methodology and Data Specification
>
> ❖ Empirical Result
>
> ❖ Summary

Thank you

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❖ IBG Malaysia

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❖ Newly released small book: The Mechanism of Gold Dinar May 2004