

Unwinding of Global Imbalances – Orderly or Disorderly Adjustment?

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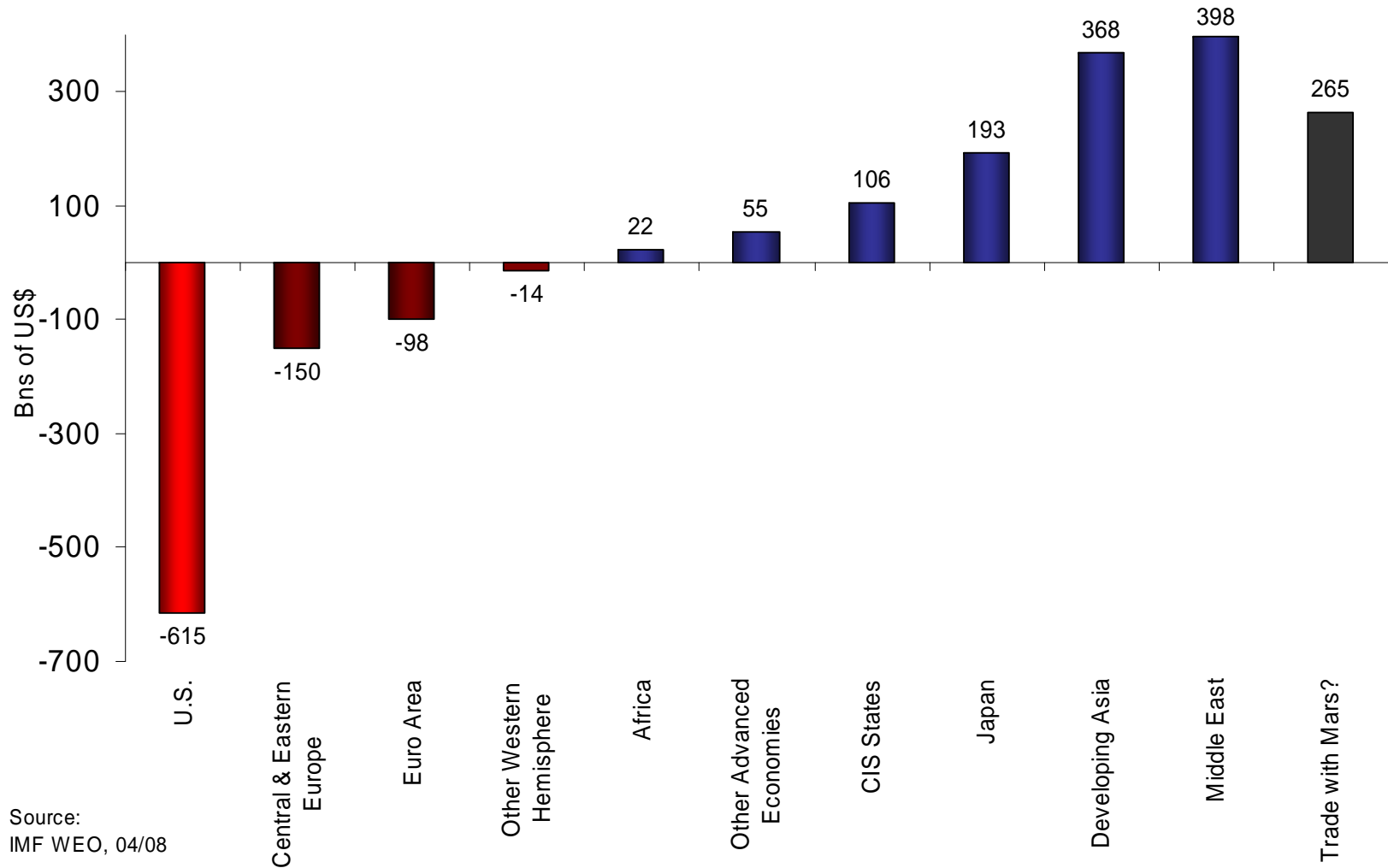
Conference on “Global Markets Disruptions: Will Global
Imbalances Unwind?”

Held by Reinventing Bretton Woods Committee and
Oesterreichische National Bank in Salzburg

June 13, 2008



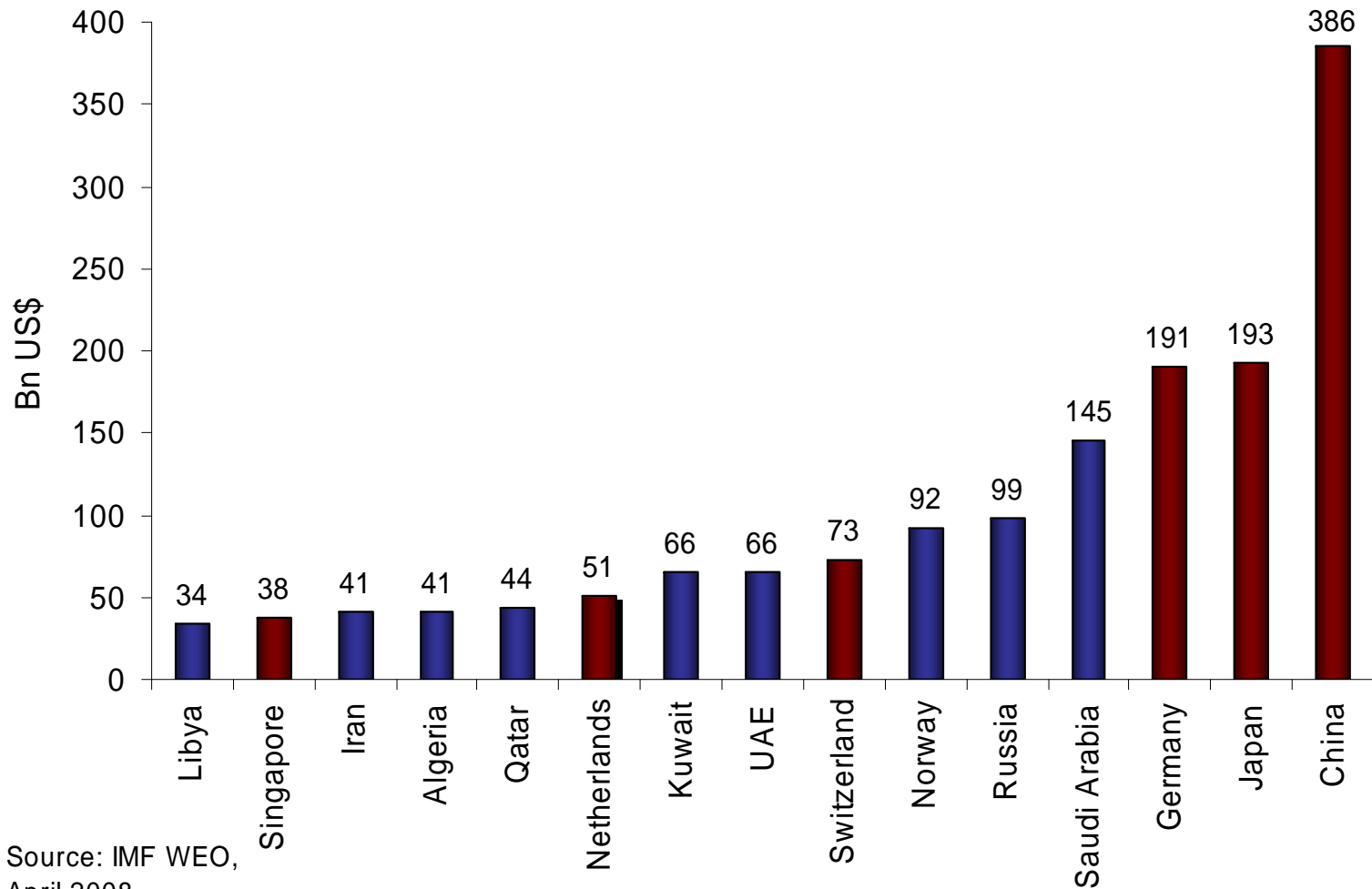
A Picture of Global Imbalances: Current Account Balances (2008E)



Source:
IMF WEO, 04/08

A Closer Look at the Surpluses

Current Account Balances (2008E)



Source: IMF WEO,
April 2008

An Orderly Unwinding?

- Greatest vulnerability to a smooth unwinding of global imbalances is the sustainability of net capital flows into the U.S.
 - Extreme scenarios—large sales of U.S. holdings
- In 2007, \$1.86 trillion of gross capital flows into the United States (BEA)
 - Funded U.S. gross capital outflows of \$1.21 trillion and U.S. current account deficit of \$739 billion
 - \$7.25 trillion in total gross capital inflows into U.S from 2003-2007
 - Over \$5bn per day
- Even if U.S. current account deficit continues to shrink, may need increased gross capital inflows to fund increased outflows by U.S. investors
- Developing economies/emerging markets are a major source of U.S. capital inflows



Outline: What Drives these Flows?

- Who invests in the United States?
- What returns have they earned?
- Do countries over- or under-invest in the United States?
- What determines country willingness to invest in the United States?
- Implications for the “Great Unwinding”

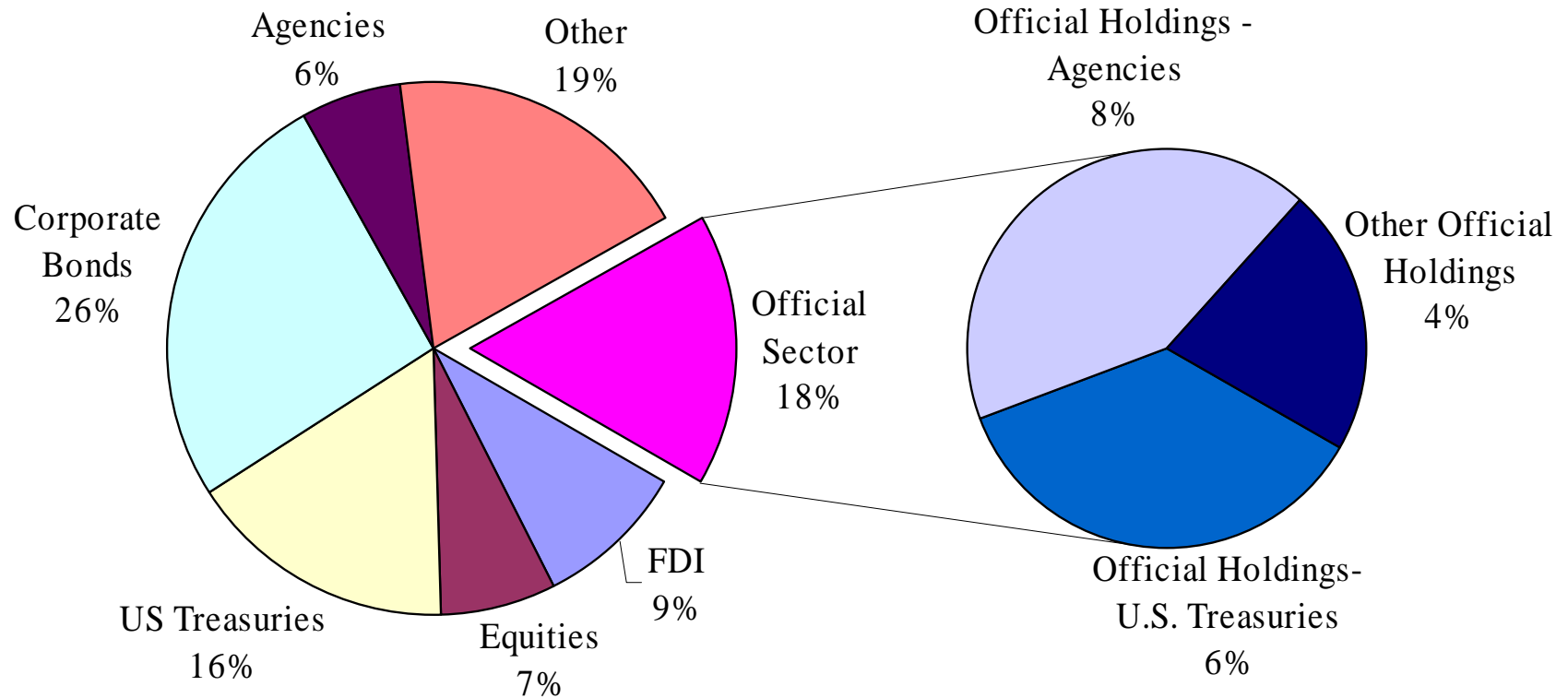


Who Invests in the United States?



Foreign Holdings of U.S. Liabilities (2006)

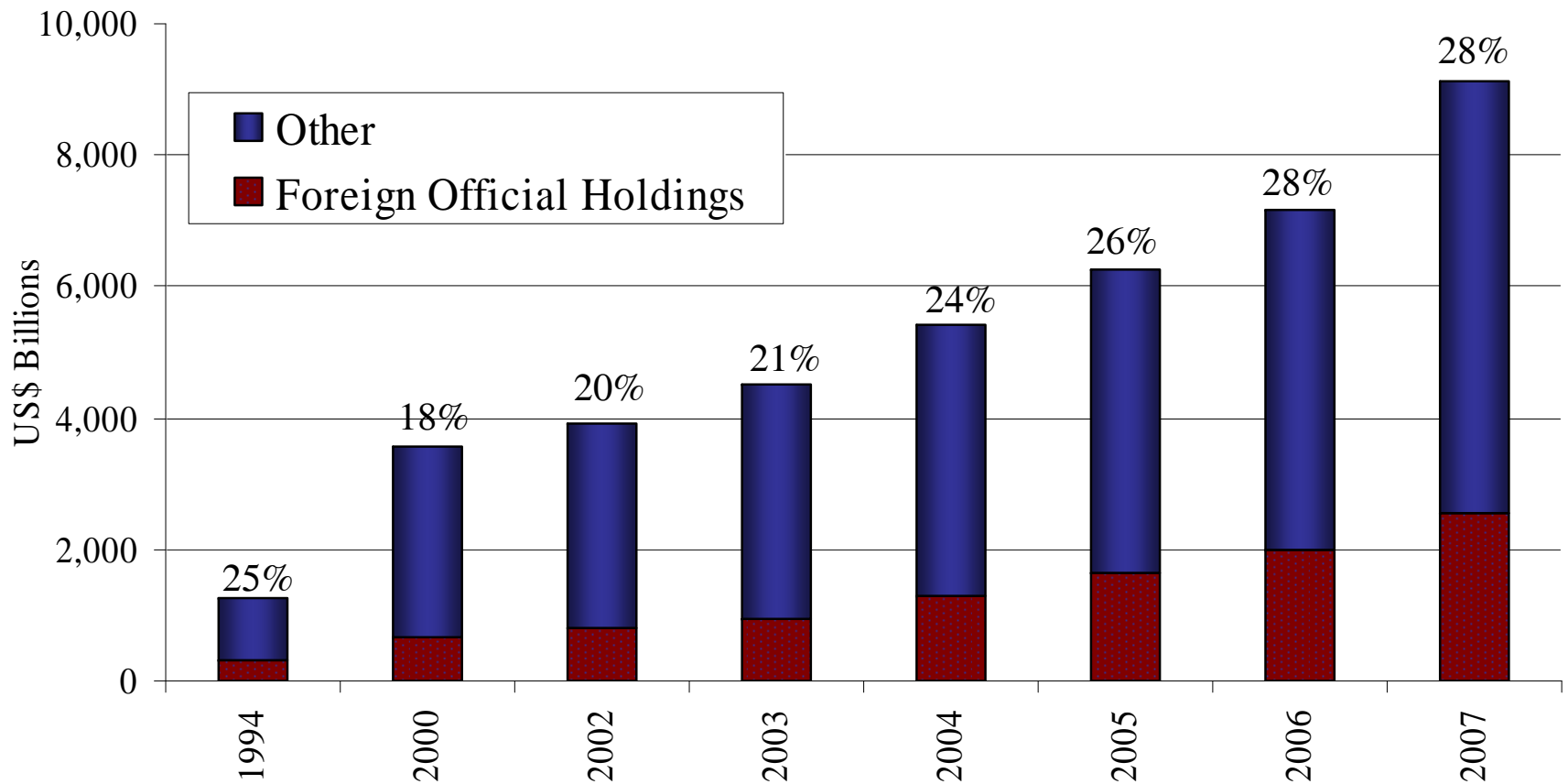
Total: \$15.1 trillion (excluding \$1.2 tn financial derivatives)



Based on data from BEA, Survey of Current Business, July 2007, Table on International Investment Position of the United States

Role of Foreign Official Sector

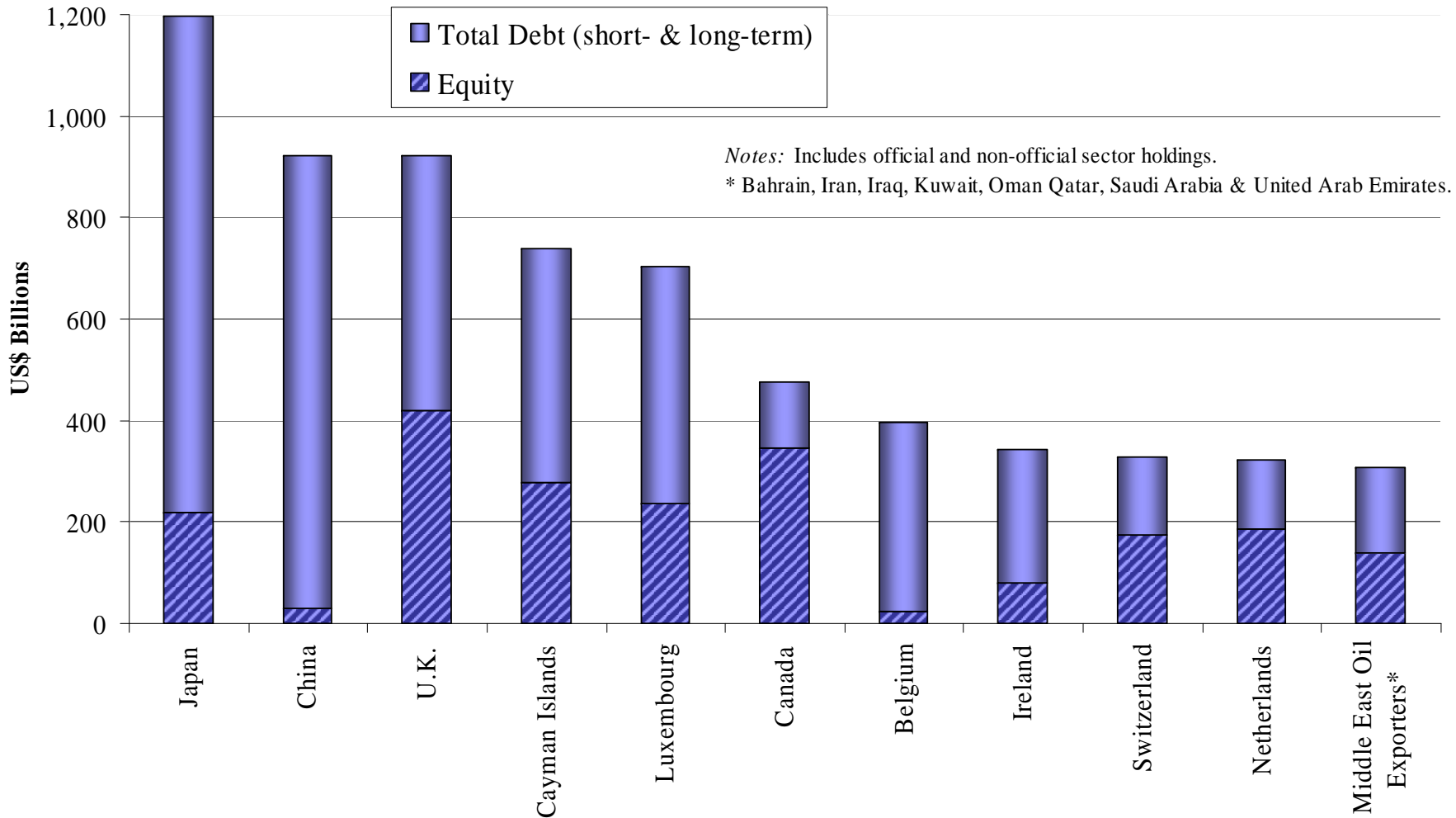
Foreign Holdings of U.S. Portfolio Liabilities



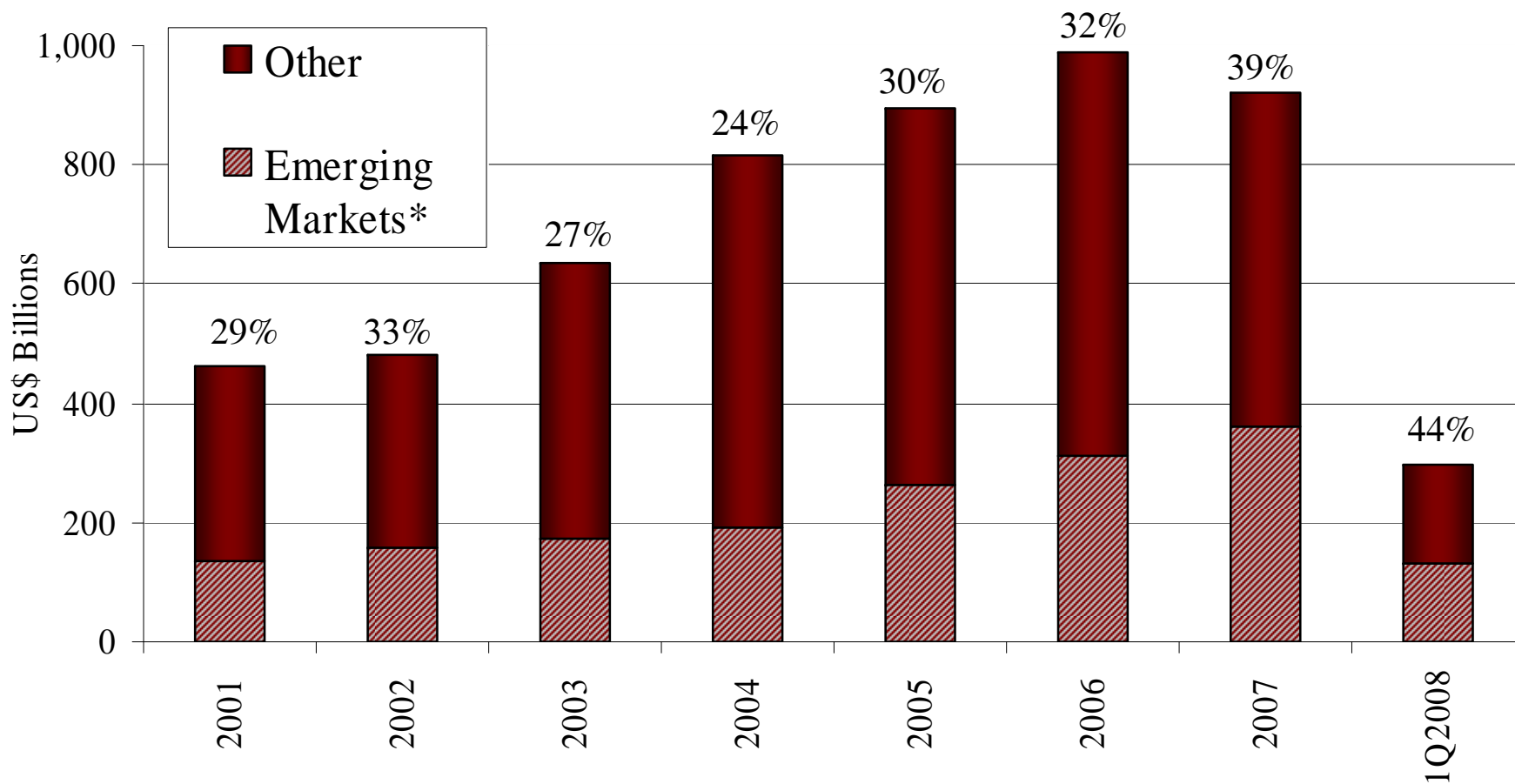
Source: USG, Foreign Holdings of U.S. Portfolio Liabilities, April 2008.

Largest Holdings of U.S. Portfolio Liabilities

(as of June 30, 2007; USG Data)



Increased Role of Emerging Economies: Net purchases of U.S. liabilities by foreigners



Notes: Excludes flows through Caribbean islands. Emerging markets does not include most of flows through Middle East.

Source: Bank of America calculations, based on USG TIC data..

Returns from Investing in the United States



Why Invest in the United States?

- U.S. Treasury Secretaries—focus on why the country is an attractive place for investment
 - Treasury Secretary Paulson: “We have deep and liquid capital markets and a growing economy that provides opportunities for foreign investors to earn an attractive return on their capital.” (3/1/07)
 - Former Treasury Secretary John W. Snow: “Today we are in a situation where sound, growth-enhancing policies in the United States have made it an extremely attractive place to invest.” (11/17/04)
- History of high returns would support continued capital inflows
 - Due to evidence that investors chase returns
 - Warther (1995) or Sirri & Tufano (1998)



Total Return on Investment Positions (in %)

	Includes Effect of Exchange Rate Movements		Excludes Effect of Exchange Rate Movements	
	U.S. Assets Abroad	Foreign Assets in the United States	U.S. Assets Abroad	Foreign Assets in the United States
2002	-4.9	-5.5	-8.7	-5.9
2003	21.2	10.5	14.2	9.8
2004	12.6	5.8	9.1	5.4
2005	9.9	2.6	14.2	3.0
2006	17.4	8.0	14.0	7.7
<i>Average annual return</i>				
2002-06	11.2	4.3	8.6	4.0
<i>Sharpe Ratio</i> ¹	0.68	-0.02	0.42	-0.06

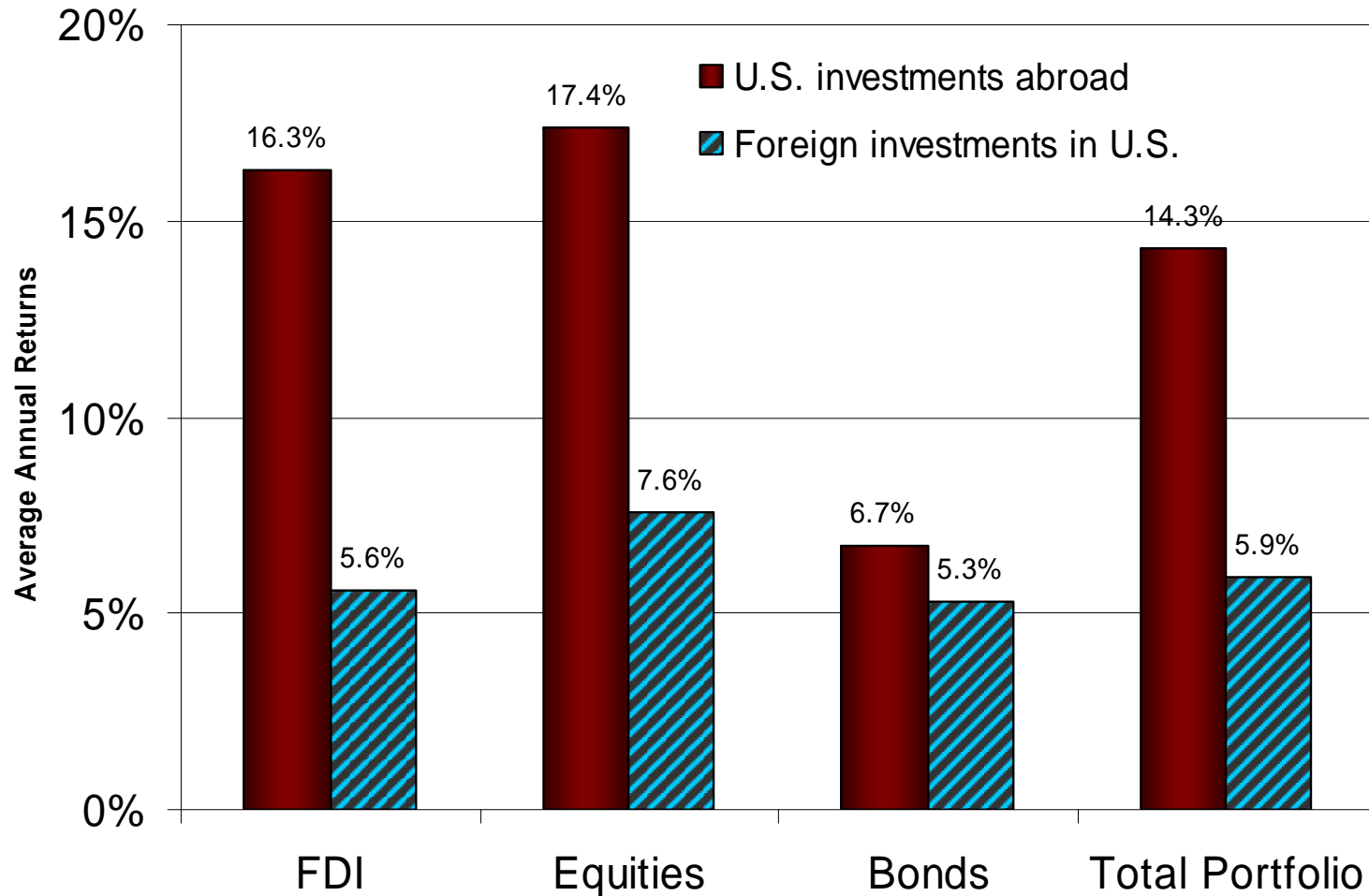
Notes: Direct investment at market value. Returns include income flows and valuation changes (which include price changes and exchange rate movements). Returns calculated as: $Return_i = \frac{(Income_i + \Delta Valuation_i)}{(Stock_{i-1} + 0.5 * Flow_i)}$

The Sharpe ratio is a risk-adjusted performance measure, calculated as the difference between the mean return for asset *i* less the risk-free interest rate (which is measured as the average interest rate on the 10-year U.S. Treasury bond over this period), all divided by the standard deviation of returns for asset *i*.

Source: Based on original data from the Bureau of Economic Analysis, *Survey of Current Business*, various years.



Return on Private Sector Investment Positions (2002-6, in %)



Average Return on Investment Positions 2002-2006, in %

	Average Return		Excludes effect of Exchange Rate Mvmts		Sharpe Index	
	U.S. Assets Abroad	Foreign Assets in U.S.	U.S. Assets Abroad	Foreign Assets in U.S.	U.S. Assets Abroad	Foreign Assets in U.S.
Total Returns	11.2	4.3	8.6	4.0	0.68	-0.02
<i>Private Sector Returns</i>						
FDI	16.3	5.6	12.9	5.6	0.53	0.08
Equities	17.4	7.6	12.0	7.6	0.37	0.17
Bonds	6.7	5.3	4.9	4.6	0.12	0.07
All securities	14.3	5.9	9.9	5.4	0.38	0.15

Notes: Direct investment at market value. Returns include income flows and valuation changes (which include price changes and exchange rate movements). Returns calculated as: $Return_t = \frac{(Income_t + \Delta Valuation_t)}{(Stock_{t-1} + 0.5 * Flow_t)}$

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Source: Based on original data from the Bureau of Economic Analysis, *Survey of Current Business*, various years.



Do Foreigners Over- or Under-invest in the U.S.?



Standard Portfolio Theory

- Three assumptions:
 - investors care only about the mean and variance of the real return of their invested wealth,
 - markets are efficient, and
 - cross-border barriers to investment are small
- Then investors should hold the world market portfolio of stocks
- Extensive literature, however, shows that investors deviate substantially from this prediction
 - Tend to hold a larger share of domestic assets in their portfolios
 - “Home bias”



Country Exposure to U.S.

*Exposure*_{*i,j*} of country *i* to U.S. security *j* as:

$$\textit{Exposure}_{i,j} = \frac{\textit{USInvestments}_{i,j}}{\textit{TotalPortfolio}_{i,j}}$$

*USInvestments*_{*i,j*} is holdings of U.S. liabilities by country *i* of U.S. security *j*;

*TotalPortfolio*_{*i,j*} is the entire portfolio holdings by country *i* of security *j*;

Defined as the total market capitalization for country *i* of security *j* plus holdings of all foreign liabilities by country *i* of security *j* less all foreign holdings of country *i*'s security *j*



Country Exposure to U.S. Equities (in %, '06)

Market portfolio:
35.8% in US
equities

Mean	4.3
Median	1.3
St. Dev.	6.8
Min	0.0
Max	27.8
# Obs.	82

Paraguay	27.8	Armenia	8.9
Costa Rica	27.8	U.K.	8.0
Singapore	26.4	Sweden	7.6
Venezuela	25.0	Mexico	7.1
Netherlands	22.4	Swaziland	6.8
Botswana	18.0	Australia	6.3
Switzerland	15.2	Austria	5.7
Canada	15.2	Ecuador	5.4
New Zealand	12.1	Israel	4.9
Norway	11.7	Japan	4.9
Uganda	10.3	France	4.4
Denmark	9.7	Bolivia	3.8



Based on USG data

Country Exposure to U.S. Debt (in %, '06)

Market portfolio:
38.2% in US debt

Mean	14.8
Median	9.1
St. Dev.	17.2
Min	0.1
Max	67.1
# Obs.	54

El Salvador	67.1	Switzerland	18.7
Costa Rica	66.6	Indonesia	18.5
Jordan	60.0	Chile	17.6
China	49.2	Slovenia	13.8
Kazakhstan	48.4	Thailand	13.6
Belgium	39.3	Poland	12.7
Latvia	38.3	Ireland	12.6
Singapore	33.9	Philippines	12.6
Mexico	29.4	South Korea	11.5
Hong Kong	26.7	Turkey	11.4
Macedonia	26.3	Malaysia	10.1
Colombia	25.0	Canada	9.8



Private and official sector holdings.
Based on USG data

An Analysis: What Determines How Much Countries Invest in the United States?

Results from NBER Working Paper #13908
“Why Do Foreigners Invest in the United States?”



Empirical Tests

Estimate country's deviation from the market portfolio in holdings of U.S. equity or bond markets as a function of:

1. **Financial market development**
 - Various measures, including size of equity market, private bond markets, stock market turnover & private credit/GDP
2. **Corporate governance/accounting standards**
 - Index incorporating corruption, rule of law, regulatory quality, property rights and accounting disclosure
3. **Controls on capital outflows**
 - Index measuring the extent of controls on capital account transactions relative to the purchases of equity and debt securities
4. **Market returns relative to US** (to capture return chasing)
5. **Correlation in market returns with US** (to capture diversification benefits)
6. **Distance/informational links with US**
 - Index incorporating distance to U.S., common language, cost of phone call, shared border, colony, currency union
7. **Trade flows** (Total trade with US/GDP)



Results

- **Financial market development is a key determinant of foreign investment in U.S. equity and bond markets**
 - Magnitude of effect decreases with income per capita
- An example based on papers estimates for China
 - If China increased its private bond market capitalization/GDP to the sample mean (about the level of South Korea)
 - Then these estimates suggest that China's holdings of US bonds fall by about \$200 billion (from \$695bn at end 2006)
- Other findings:
 - Other significant factors: capital controls, trade
 - Little evidence of diversification motives
 - Some evidence of return chasing in equity markets



Final Thoughts: Implications for the “Great Unwinding”

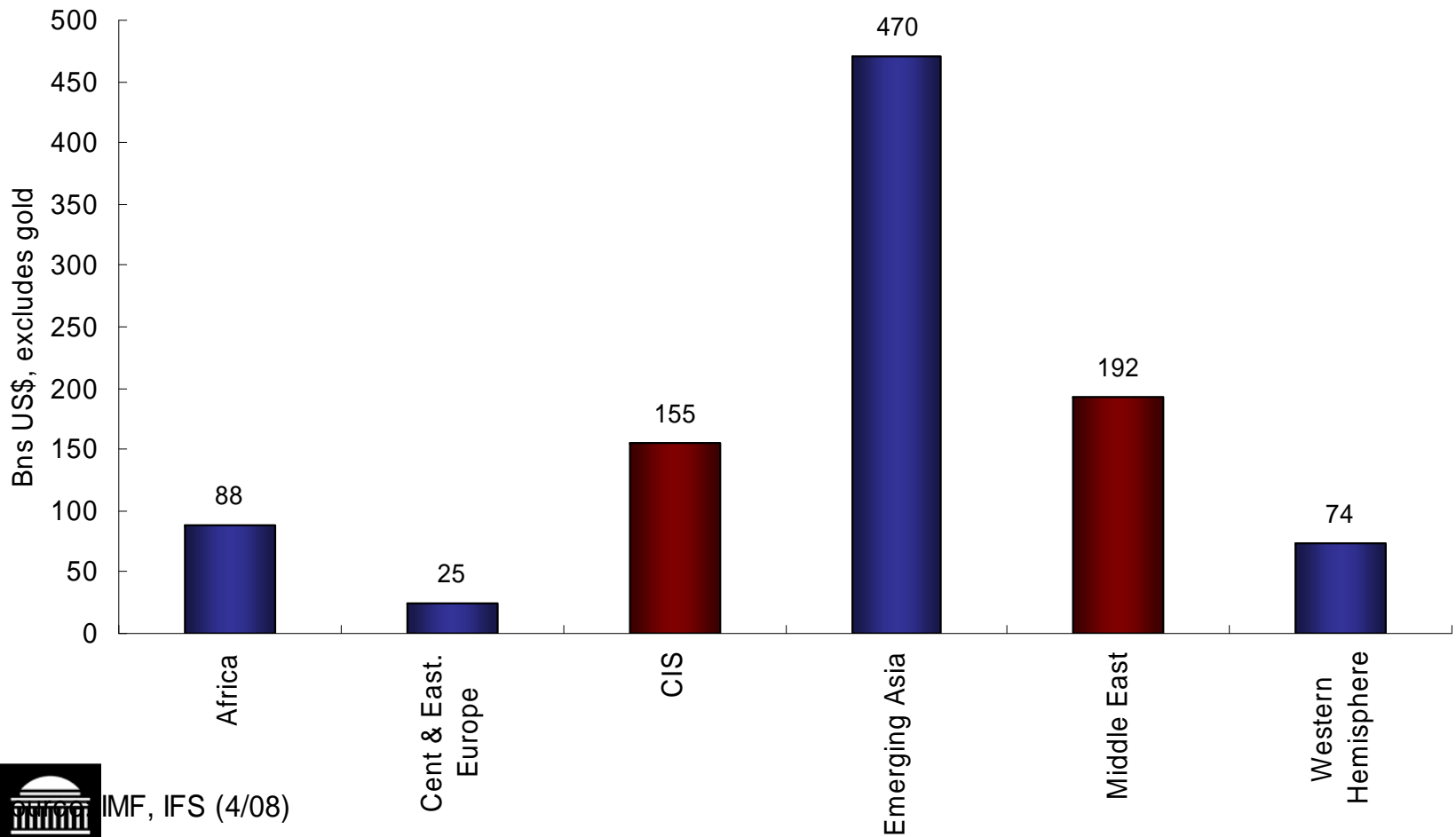


Key Question

- Will capital flows into the U.S. be stable enough to avoid a “dollar crash” / sharp increase in U.S. interest rates?
 - Implies not just avoiding net sales of U.S. asset holdings, but also continued net capital inflows
 - Will require at least \$600 bn of new investment in 2008
- Several reasons for foreigners to continue to invest in US other than high returns or standard portfolio model predictions
 - More developed & liquid US financial markets important for capital flows into both equity and bonds (albeit not whole story)
 - Continued important role for emerging markets
 - Continued role of official sector (although still less important than private sector)



Increase in Reserves (2008E)



But Risks are Increasing....

- Increased risks:
 - Recent history of low returns by foreigners investing in U.S.
 - Financial market development continues in many countries (although effect will be slow)
 - Recent vulnerabilities in US financial markets; cracks in the “gold standard”?
 - Perceived hostility to foreign investment in some sectors
 - Potential for greater regulation in the future
 - Risk that an overreaction & poorly thought out
- Bottom line:
 - Most likely scenario is unwinding that is no more disorderly than present
 - But substantial risks still remain—especially factors that will undermine foreigners willingness to provide net financing to U.S.

