2009 Fundamental Equilibrium Exchange Rates:

Methodology Notes

William R. Cline
Peterson Institute for International Economics
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Model Structure -1

- Change in Current Account as % GDP = % Change in Effective Exchange rate x Trade Impact Parameter
- $\Delta CA\% = \%\Delta E \times b$
- Impact parameter higher for more open economy
- US: $b = 0.16$ China: $b = 0.30$
- 10% $\Delta E \rightarrow$ 1.6% GDP impact US

Model Structure - 2

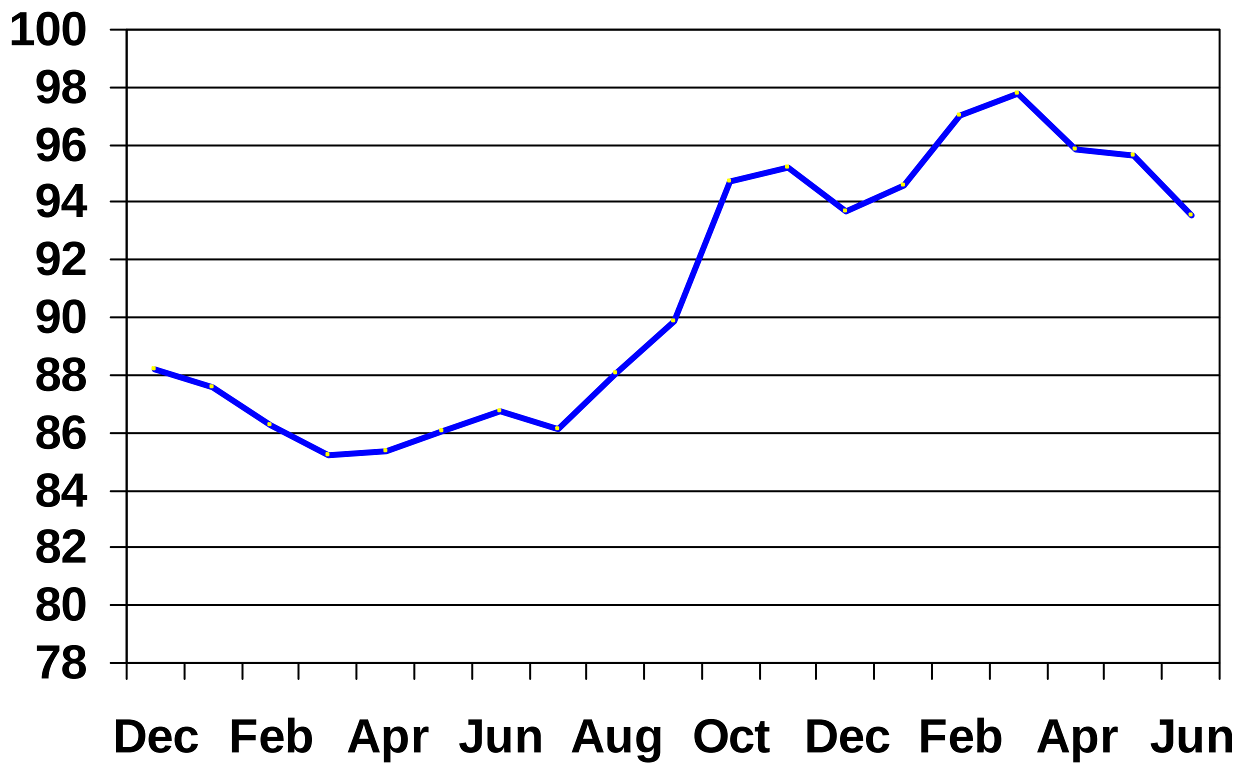
- Change in effective exchange rate
  = Change in bilateral against dollar (*Z*)
  minus trade-share weighted appreciations against dollar of partners
- $\%\Delta E_i = Z_i - SUM(Z_k \times W_{ik})$
- Target change in effective rate = Target CA change / Impact parameter
  ($\%\Delta E_i = \%\Delta CA/Y \div b$)

Model Structure -3

- Solve for 34 currency changes against dollar (*Z*) that yield target set of effective exchange rate changes
- Matrix form: $\mathbf{E} = \mathbf{Z}\,(\mathbf{I} - \mathbf{W})$
- So: $\mathbf{Z} = (\mathbf{I} - \mathbf{W})^{-1}\,\mathbf{E}$
- "SMIM": Symmetric (US treated equally) Matrix Inversion Method

Fed Broad Real Dollar Index

(Dec. 2007- June 2009)



Changes from IMF WEO
(Oil price, $/bbl: left; US CA%: right)

China Pipeline Effects?

- IMF: China's CA flat at 10% of GDP through 2012
- But China's REER in March 09 was 14% stronger than in Feb 08
- Applying Impact Parameter (0.3) implies reduction by 4.2% of GDP after 2-year lag
- So: Possible overstatement of appreciation needed for Renminbi

US Long-Term Fiscal and External Imbalances (Special Report 20)

- CBO Dec: 07: fiscal deficit 10% of GDP by 2030 (social spending)
- Projected Cline current account model:

  - this “Fiscal Erosion” scenario versus “Benign Baseline” 2% GDP fiscal deficit
- Trade deficit rises by 40% of extra fiscal deficit
- Interest rates, dollar rise

US Long-Term Fiscal and External Imbalances - 2

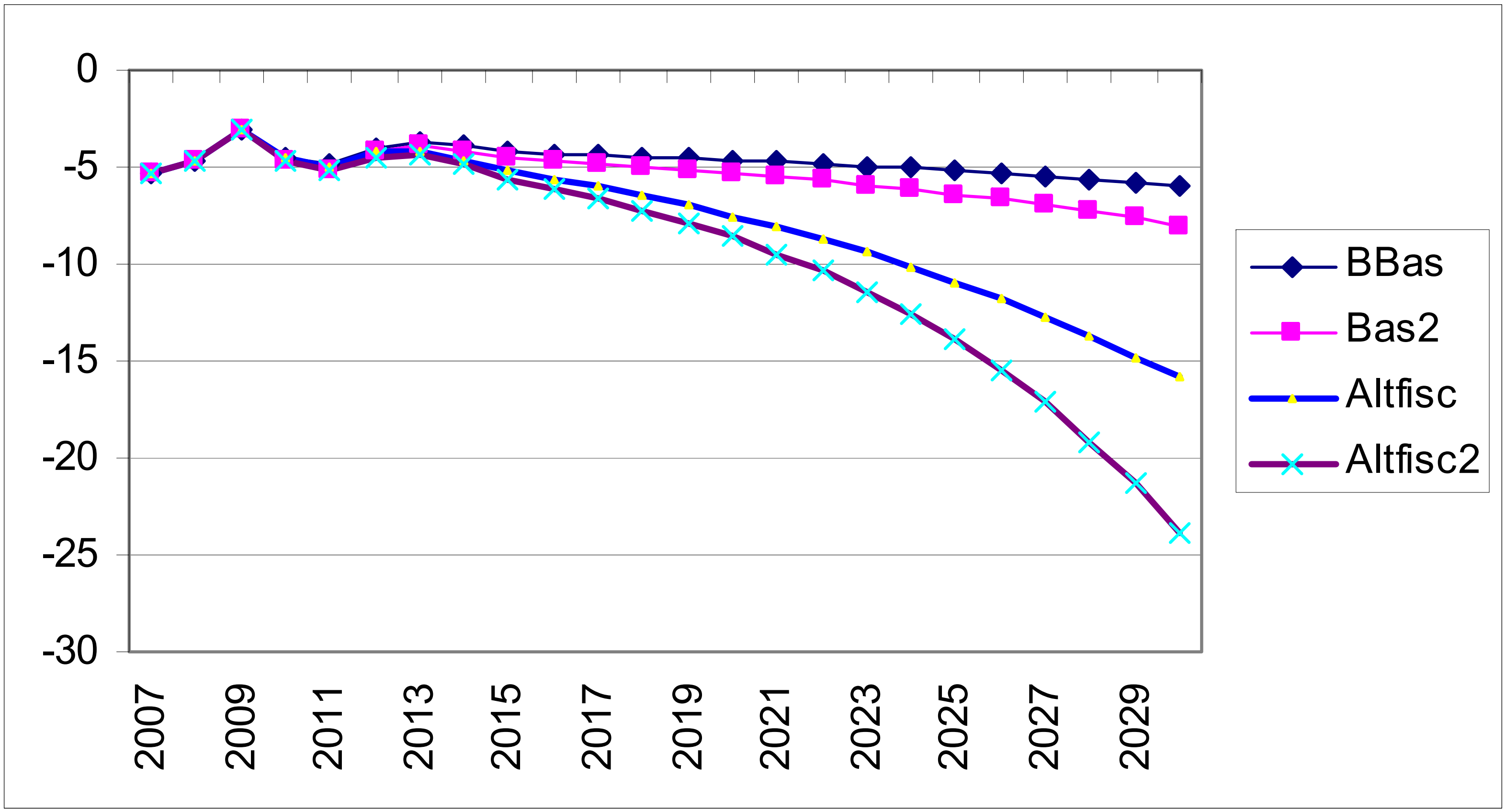
- Cumulative effect of interest payments widens current account deficit much more. Capital services deficit in 2030:

  benign baseline: 0.8 % of GDP

  fiscal erosion: 6.8 % of GDP
- Worse if interest rate rises from deteriorating country risk
- External vulnerability adds to case for fiscal adjustment

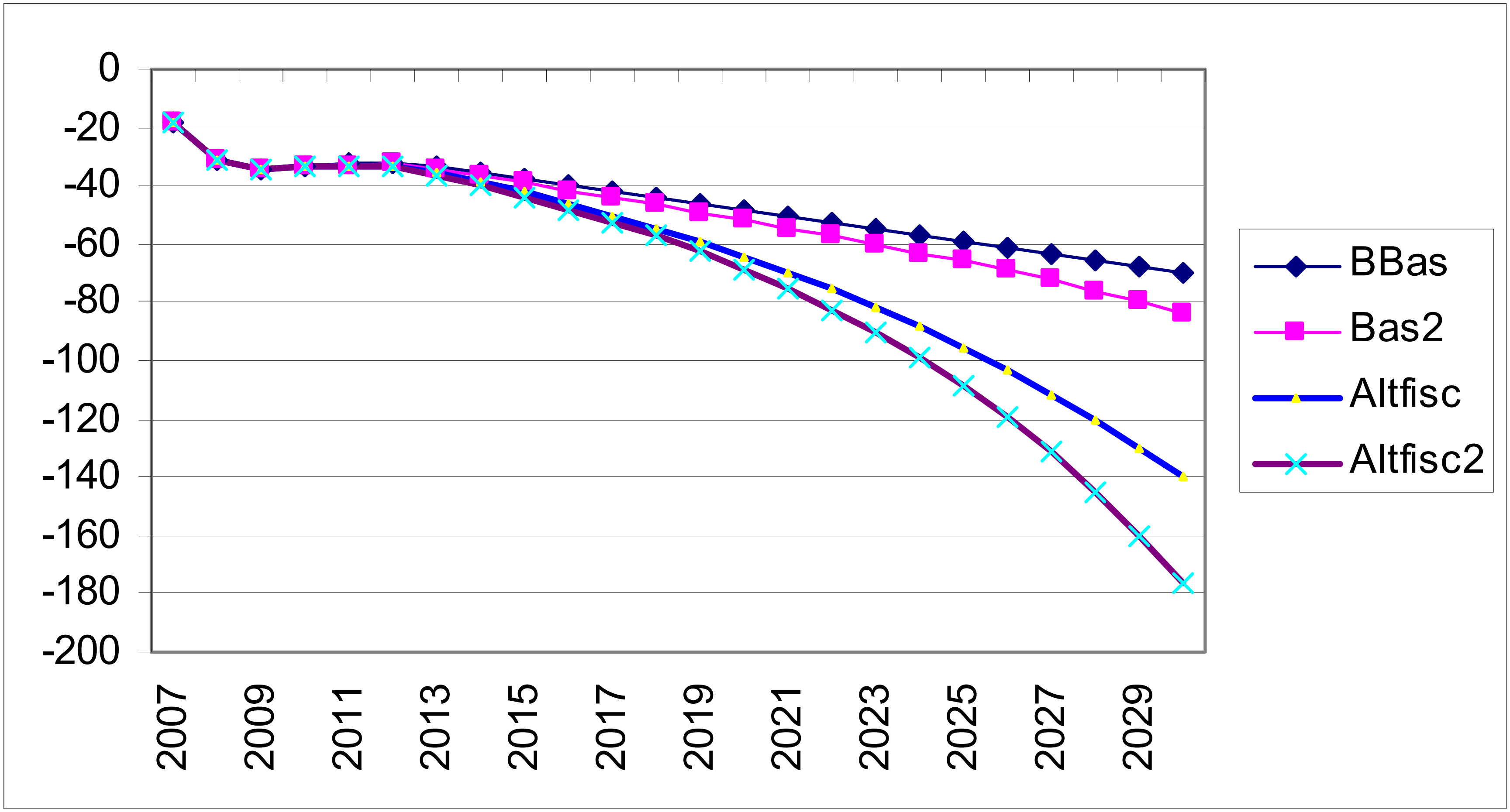
US Current Account % GDP:

Benign Baseline and Fiscal Erosion



US NIIP % GDP:

Benign Baseline and Fiscal Erosion



FEERs and the Crisis

- Imbalances were not the main cause of the crisis
- But the international system is far more fragile than we had thought
- Imbalances can only aggravate the fragility
- FEERs can be input into policies toward reducing imbalances