

# Why Does the Doha Development Agenda Fail? And What Can be Done? A Computable General Equilibrium-Game Theoretical Approach

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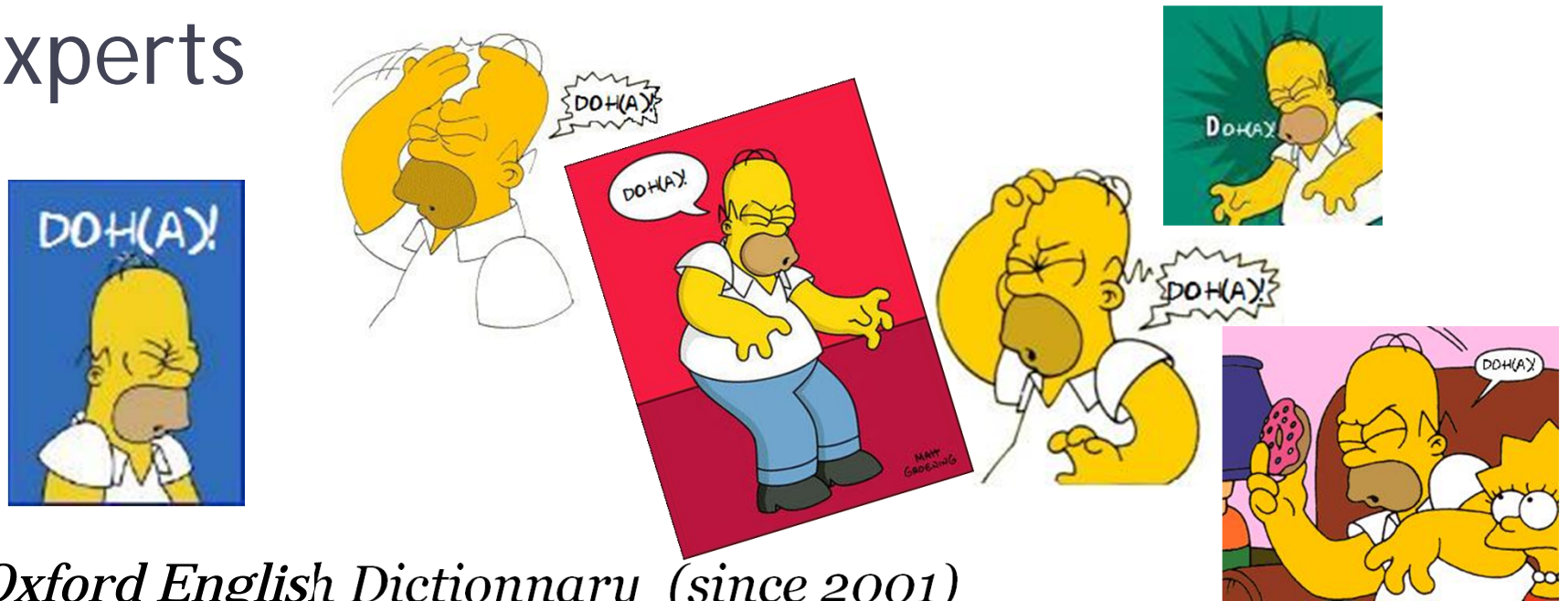


# Setting the stage

# Trade negotiations under the WTO

Place	Date	#	Topic
Singapore	Dec. 1996	130	New issues for the WTO (Investment, Public Procurement, Trade Facilitation, Competition)
Geneva	May 1998	134	Next round preparation, role of NGO
Seattle	Nov. 1999	136	Failure in launching the new round
<b>Doha</b>	<b>Nov. 2001</b>	<b>145</b>	<b>The Doha Development Agenda is launched</b>
<b>Cancun</b>	<b>Sept. 2003</b>	<b>146</b>	<b>Failure to reach agreement on the modalities</b>
Geneva	July 2004	147	« July Framework ». First agreement.
Hong Kong	Dec. 2005	154	Ministerial Conference. New deadline for the modalities (2006)
	July 2006		Pascal Lamy suspended trade talks <i>sine die</i> .
Geneva	July 2008		Failure of a one week mini-ministerial after several issues of draft modalities between Dec 07 and July 08

# The Doha Round stalemate: a source of disappointment for top trade experts



*Oxford English Dictionary* (since 2001)

**Doh[a]!** “**expressing frustration at the realization that things have turned out badly or not as planned, or that one has just said or done something foolish.**”

Homer Simpson: “D’oh™[a]!”

# Several questions at stake

- Can we explain the failure of the Doha Round relying on economic theory?

- Can we in  tions to this dead-end?

- Can we understand the role of coalitions in the WTO context?



# General context

- Focus on the 2003 Cancun situation
- By the way, this study has been done in early 2004 for the European Commission
- Innovative approach combining CGE analysis and Game Theory



# Methodology

# Overview

## Defining Scenarios

- *Goal:* Creating 143 scenarios by combining different pillars in the negotiations
- *Tool:* MAcMapHS6 v1 and Bound tariff databases

## Simulating Scenarios

- *Goal:* Assessing the economic impacts on the 143 scenarios to define countries' payoffs
- *Tool:* MIRAGE CGE and the GTAP 6 database

## Finding Scenario outcomes

- *Goal:* Finding the outcome of the bargaining process in different game configurations
- *Tool:* Nash Bargaining Game Theory





# Methodology

## 1- Building scenarios

# Negotiation space

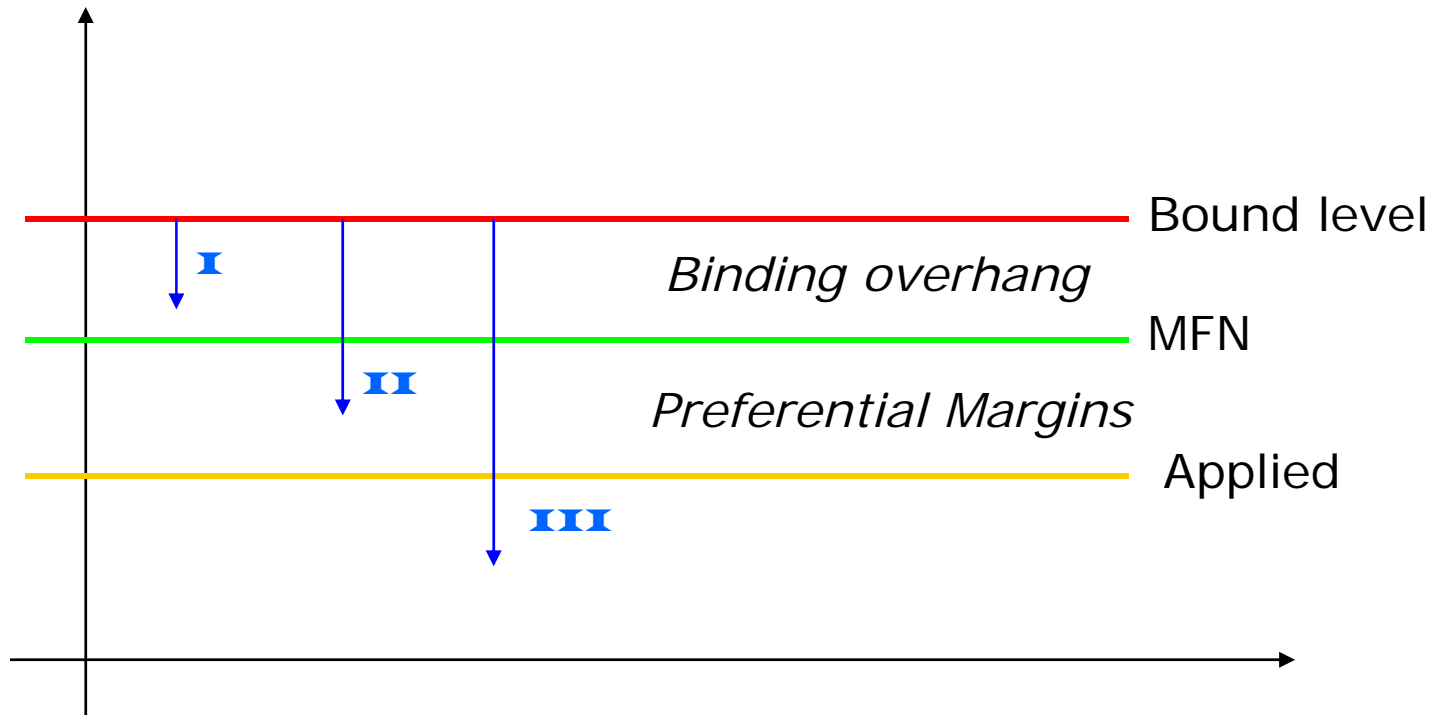
	Domain			
	A	B	C	D
Value	Services	NAMA	AMA	Exp. Subsidies
0	Status-quo	Status-quo	Status-quo	Status-quo
1	Reduc. by 50%	a=10%	a=25%	Reduc. by 75%
2	n.a.	a=10%+SDT	a=25%+SDT	n.a.
3	n.a.	a=5%	a=15%	n.a.
4	n.a.	a=5%+SDT	a=15%+SDT	n.a.
5	n.a.	0-0	Linear formula + SDT	n.a.

- Focus on market access
- Swiss formula with coefficient  $a$  assumed in most of the cases
- 143 scenarios + Status-quo
- Scenario codification  $sABCD$

# Scenario implementation

- Goods
  - Implemented at the HS6 level
  - MAcMapHS6v1 (see Bouet and al, 2008) applied tariffs database
  - Bound tariffs dataset (see Bchir, Jean and Laborde, 2006)
- Services
  - Homogenous *ad valorem* equivalent import duties on business services of 20%

# Tariff cut implementation





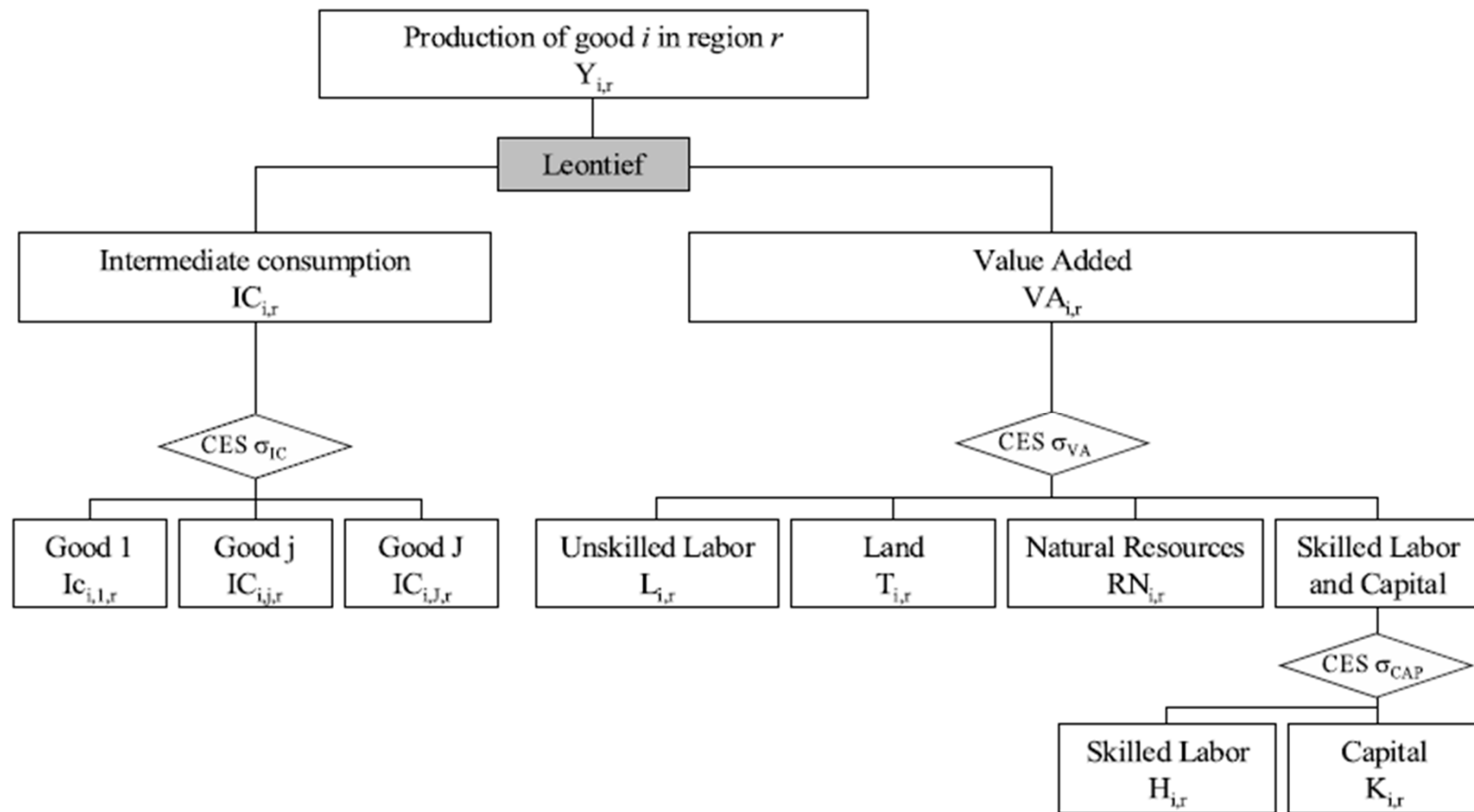
# Methodology

## 2- the CGE framework

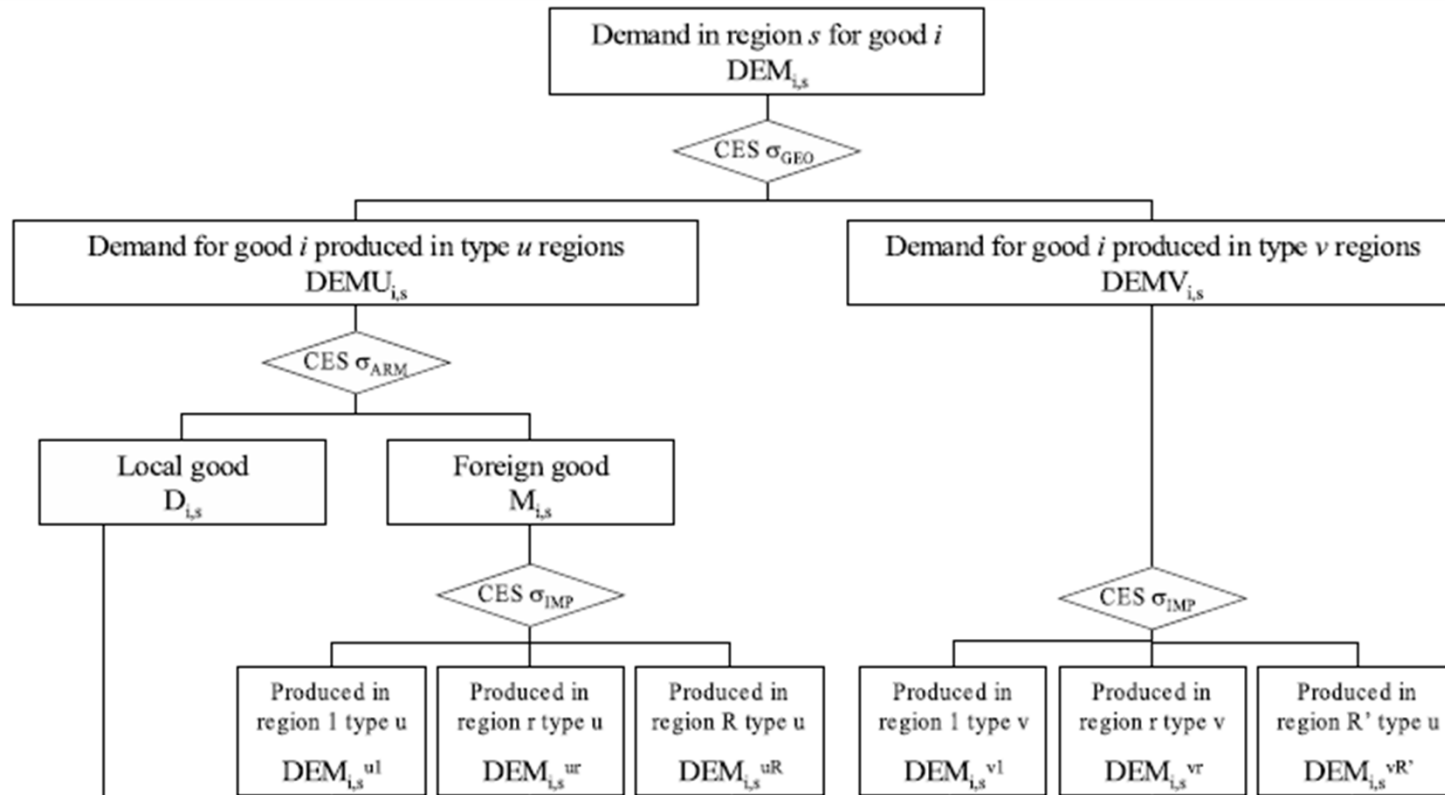
# The MIRAGE Framework

- A multi-country, multi-sector CGE
- Features of the version used:
  - Static
  - Perfect competition
  - No Government, only one representative agent
  - CES-LES Final Demand function
  - Take into account TRQ rents
- Current account fixed as a share of world GDP
- Used GTAP 6 database
- See Decreux and Valin (2007)

# MIRAGE - Supply side



# MIRAGE - Demand side





# Aggregation: 23 sectors x 25 regions

Region	Coalition	Region	Coalition	Region	Coalition
Argentina	G22/Cairns	EU25		RoAsia	
Australia	Cairns	India	G22	RofCentAm	G22
Bangladesh	G90	Indonesia	Cairns	RofSouthAm	G22
Brazil	G22/Cairns	Japan	G10	ROW	
Canada	Cairns	Korea_Tw	G10	SouthAfrica	G90/G22/C
Chile	G22/Cairns	MeditCount/	G90		airns
China	G22	Mexico	G22	SubSahAf	G90
CIS		NewZealand	Cairns	Thailand	G22/Cairns
EFTA	G10			USA	

*Try to identify key players*



# Methodology

## 3- Game theory tools

# Defining the negotiators' objective

Four indicators are considered in this study:

- The Hicksian equivalent variation of the representative agent. This indicator means that governments are maximizing national welfare;
- Real Gross Domestic Product (GDP) is often cited as an objective by negotiators;
- The exports growth is a mercantilist objective, frequently quoted by negotiators;
- The terms of trade is another mercantilist objective, but it implies that trade is a zero-sum game.

# The Nash Bargaining solution

- The \$1 game
- Fulfills a set of good properties (axiomatic theory)
- Solutions depend on:
  - Payoffs
  - Threat points (to be defined, here status-quo)
  - Bargaining powers
    - Unweighted case (1 player/region, 1 vote)
    - Economic weights (share in world GDP)
    - “Democratic” weights (1 country, 1 vote)

# Formulation

- Without transfers, to choose a scenario  $s$  as

$$s^* \in \text{Arg}_{s \in S} \text{Max} G(s) = \prod_m (W^m(s) - W_0^m(s))^{\alpha_m}$$

s.t. the participation constraint of every player  $m$

$$W^m(s^*) - W_0^m \geq 0, \forall m$$

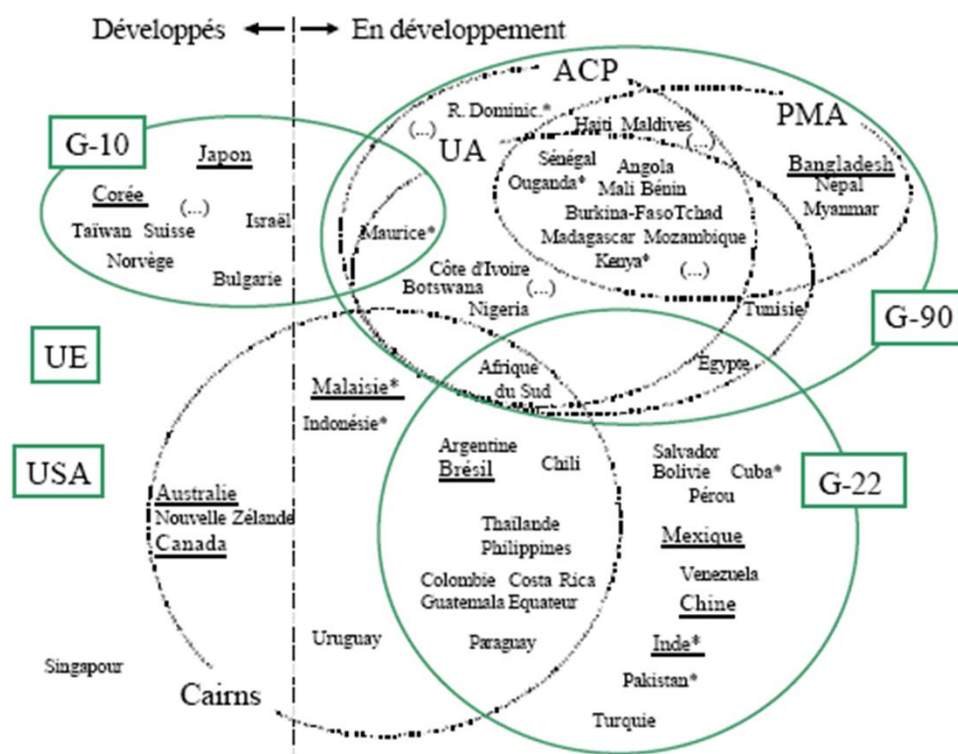
- With transfers, the objective is

$$s^* \in \text{Arg}_{s \in S} \text{Max} G(s) = \prod_m (W^m(s) + T^m - W_0^m)^{\alpha_m}$$

s.t. 
$$\sum_m T^m = 0$$

$$W^m(s^*) - W_0^m \geq 0, \forall m$$

# Looking at coalitions



- We will focus on
  - G-10
  - G-20
  - G-90
- We do not allow for transfers between members
- We assume Nash Bargaining among members

From Jean and Fontagne (2003)

# The coalitions

- Difficulty to justify coalitions in the WTO context (unanimity principle):
  - Chae and Heidhues (2002) “*Bargaining between groups*”: problem of heterogeneity inside the group. Geometric average of the utility of the members
  - Manzini and Mariotti (2005) “Alliances and negotiations”. Alliance: members should have the same ordinal preferences, not necessarily the same intensity. Optimal Delegation.
  - **Joint bargaining paradox** of John C Harsanyi(1977) (loose One right to talk)
- Potential reasons:
  - *For technical expertise (Fixed cost)*
  - For escaping retaliation
  - For being listened by the major players (power to say “**NO**” )



# Results

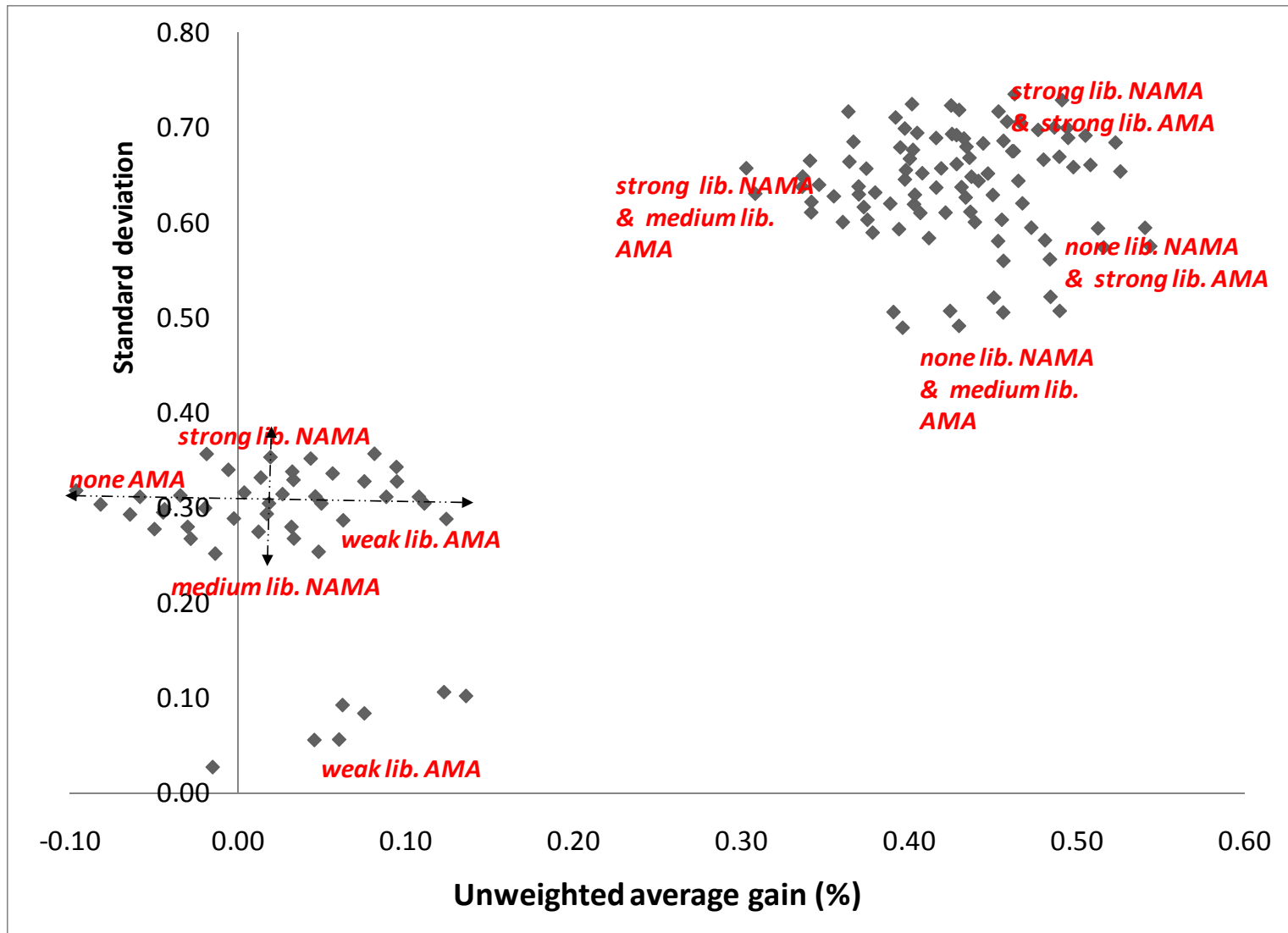


# World Optimum

	<b>With liberalization in services</b>	<b>Without liberalization in services</b>
Optimal scenario	s1531	s0531
Eq. Variation	\$105.05bn or +0.33%	\$93.8bn or 0,29%
Real GDP	\$127.21bn or 0.41%	\$114.99bn or 0.37%

Note: s1531 implies liberalization in services (1), the strongest liberalization ( $\alpha=5\%$ ) in NAMA including the 0-0 in textile and wearing (5), the strongest liberalization ( $\alpha=15\%$ ) in AMA (3) and the reduction of export subsidies. s0531 is the same scenario without services liberalization.

# An uneven gain



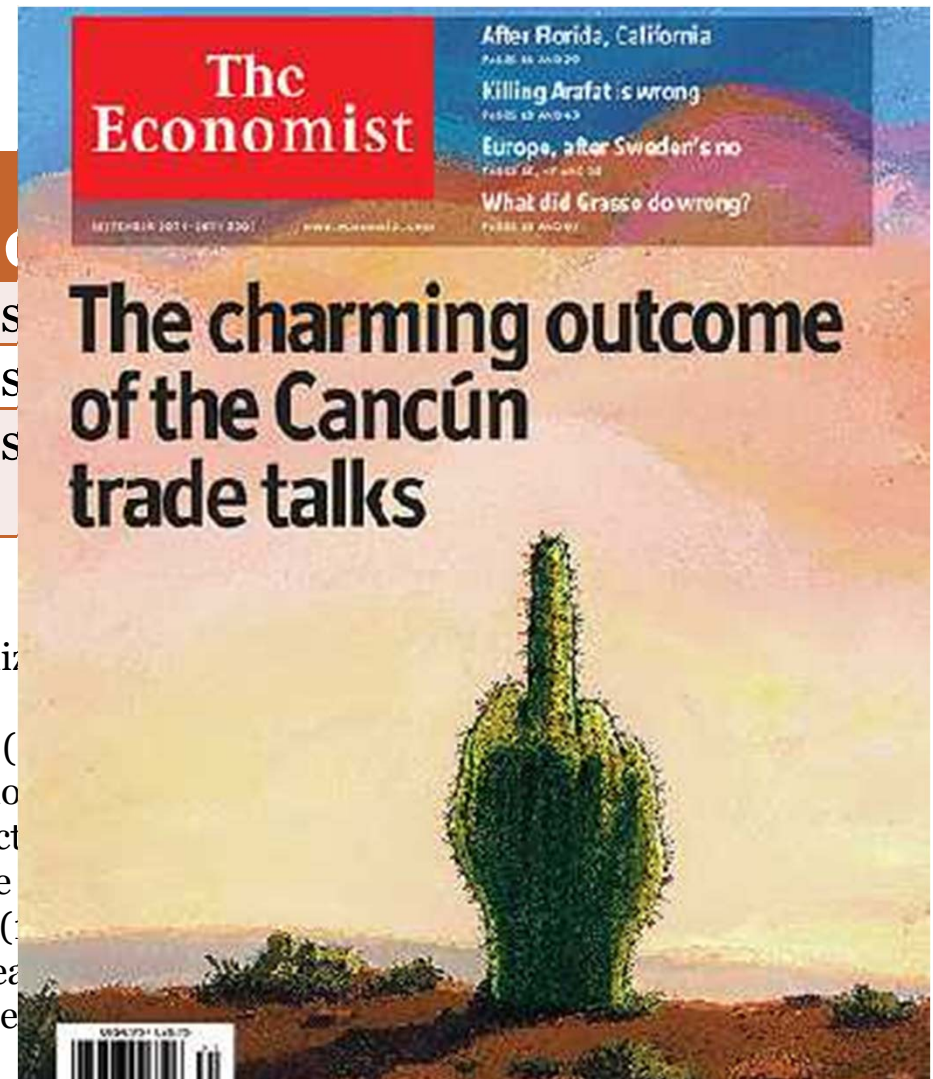
# Nash bargaining outcome

	Equivalent variation	
Unweighted	\$1000	s
“Democratic”	\$1000	s
GDP weighted	\$1000	s

Note: \$1000 is a statu-quo with only a liberalization (in the modeling).

\$1510 implies liberalization in services (including the 0-0 in textile, a moderate liberalization in agriculture, and a moderate liberalization in reduction. \$1520 differs from \$1510 by the introduction of the same scenario but the AMA liberalization is the same.

\$1551 implies liberalization in services (including the 0-0 in textile and wearing (5), the wearing of the same scenario but the AMA liberalization is the same. \$0531 is the same.





# Investigating potential solutions

- A. Limiting the number of players
- B. Allowing side payments
- C. Extending the scope of negotiations

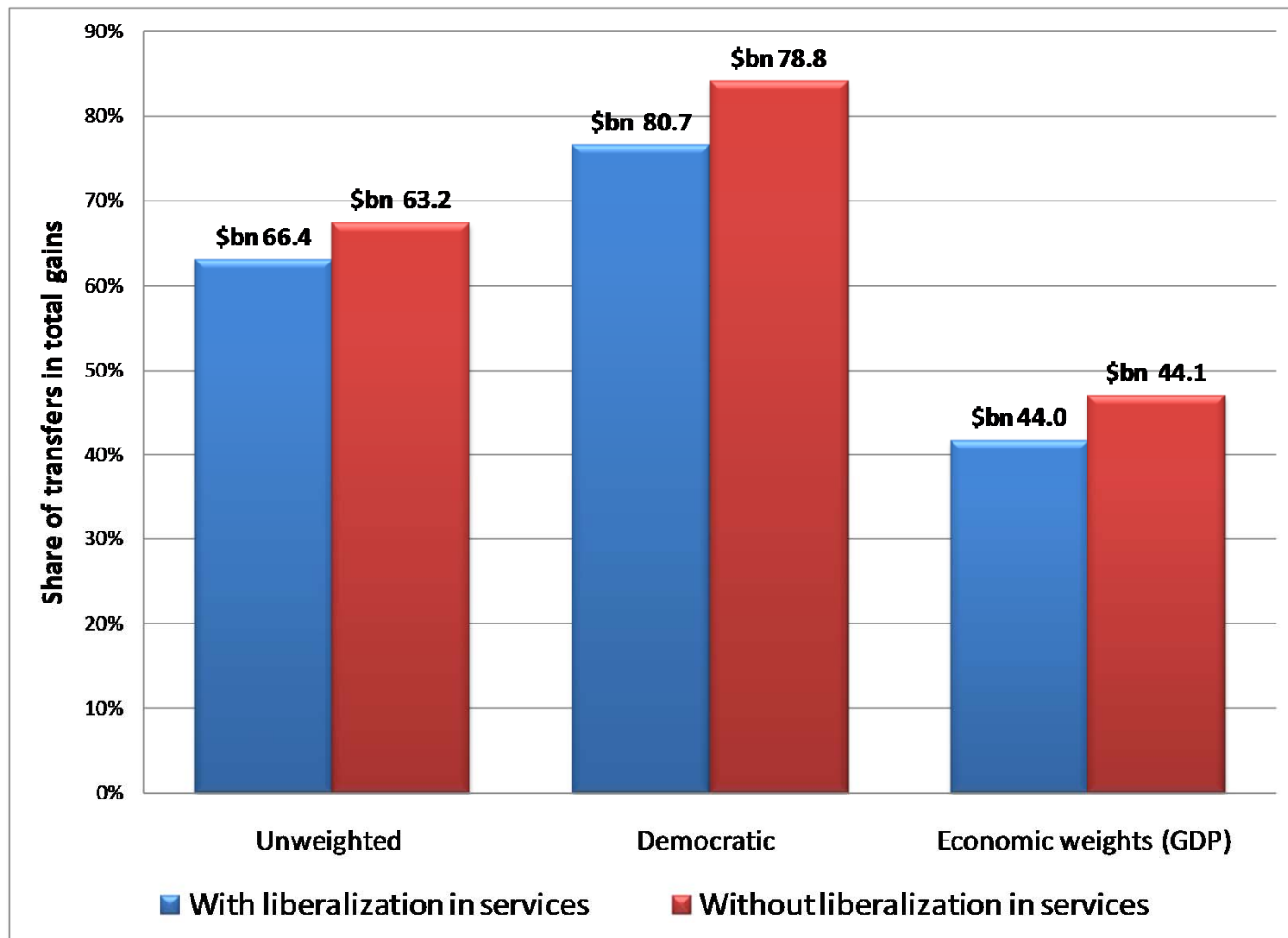
# A- Too many players: let's exclude the smallest

Sally (2004): "*Stated baldly: only a minority of the WTO members have the bargaining power and capacity to advance negotiations. These are the OECD countries and about a score or so of advanced developing countries (most of them in the G20). Hence the key liberalizing and rule-making deals in the WTO must be done by the 30-plus countries (counting the EU as one) that accounts for over 80% of international trade and an even bigger share of foreign direct investment*"

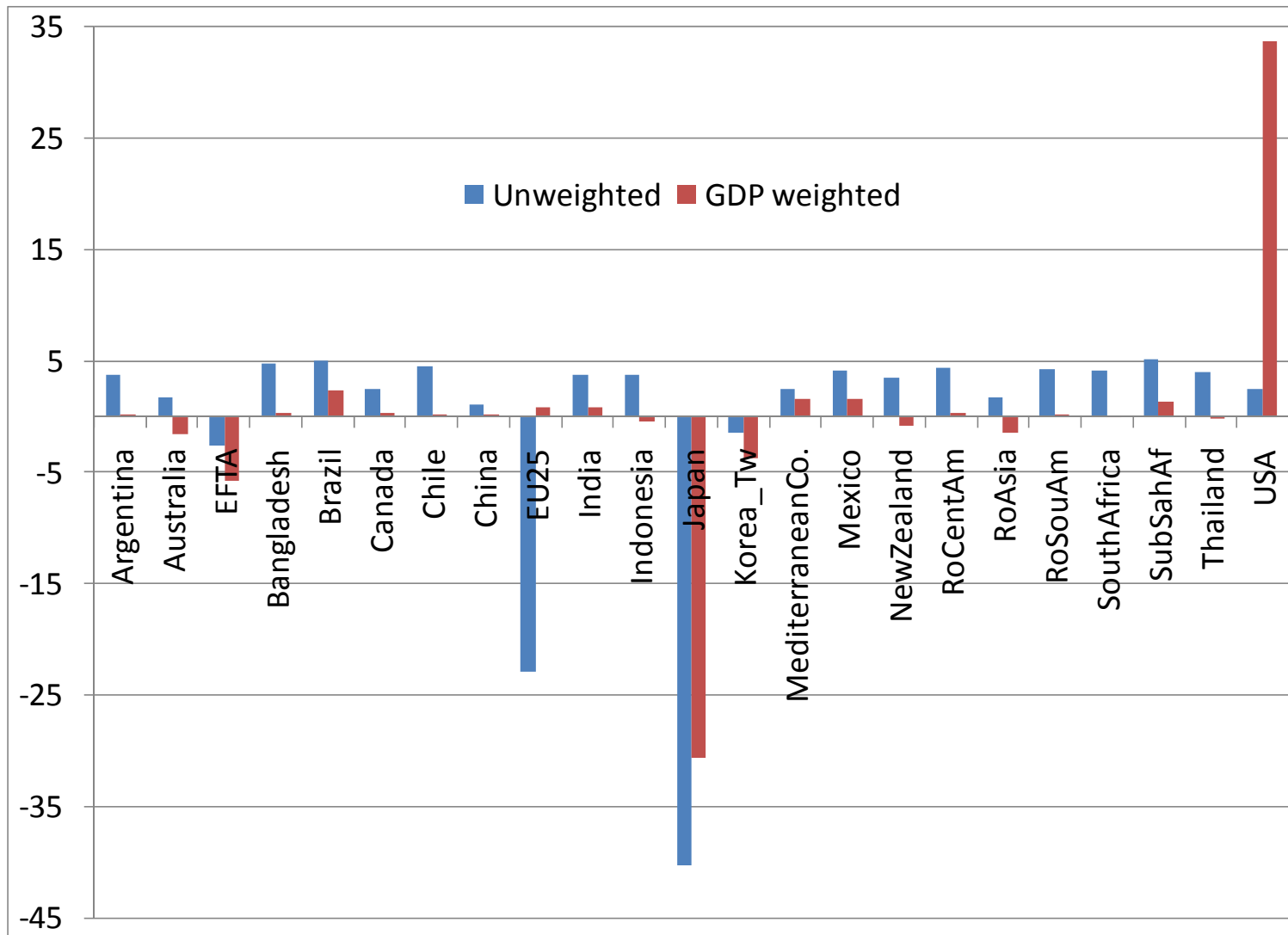
<b>Exclusion threshold</b>	<b>Equivalent variation</b>	<b>real GDP</b>	<b>Exports</b>	<b>Terms of trade</b>
<b>None</b>	1	31	39	0
<b>&lt; 2% of world GDP</b>	59	47	142	0
<b>&lt; 3% of world GDP</b>	60	47	142	0
<b>&lt; 4% of world GDP</b>	87	47	142	112

It's efficient but it should be a **Development Round...**

## B- Allowing side payments



# Pattern of Transfers - USD bn



## C- Impact of an extension of the negotiation domain (IR)

Criteria	Dimension	Card of the IR set			
		scenarios set	All players	Exclusion at 2% of world GDP	Exclusion at 4% of world GDP
Equivalent variation	Services	1	1	1	1
	Industry	5	0	0	5
	Agriculture	5	0	0	0
	Export subsidies	1	0	0	1
	All dimensions	143	1	59	87





# Understanding the role of coalitions

A- How to assess the effects of coalitions?

B- G20

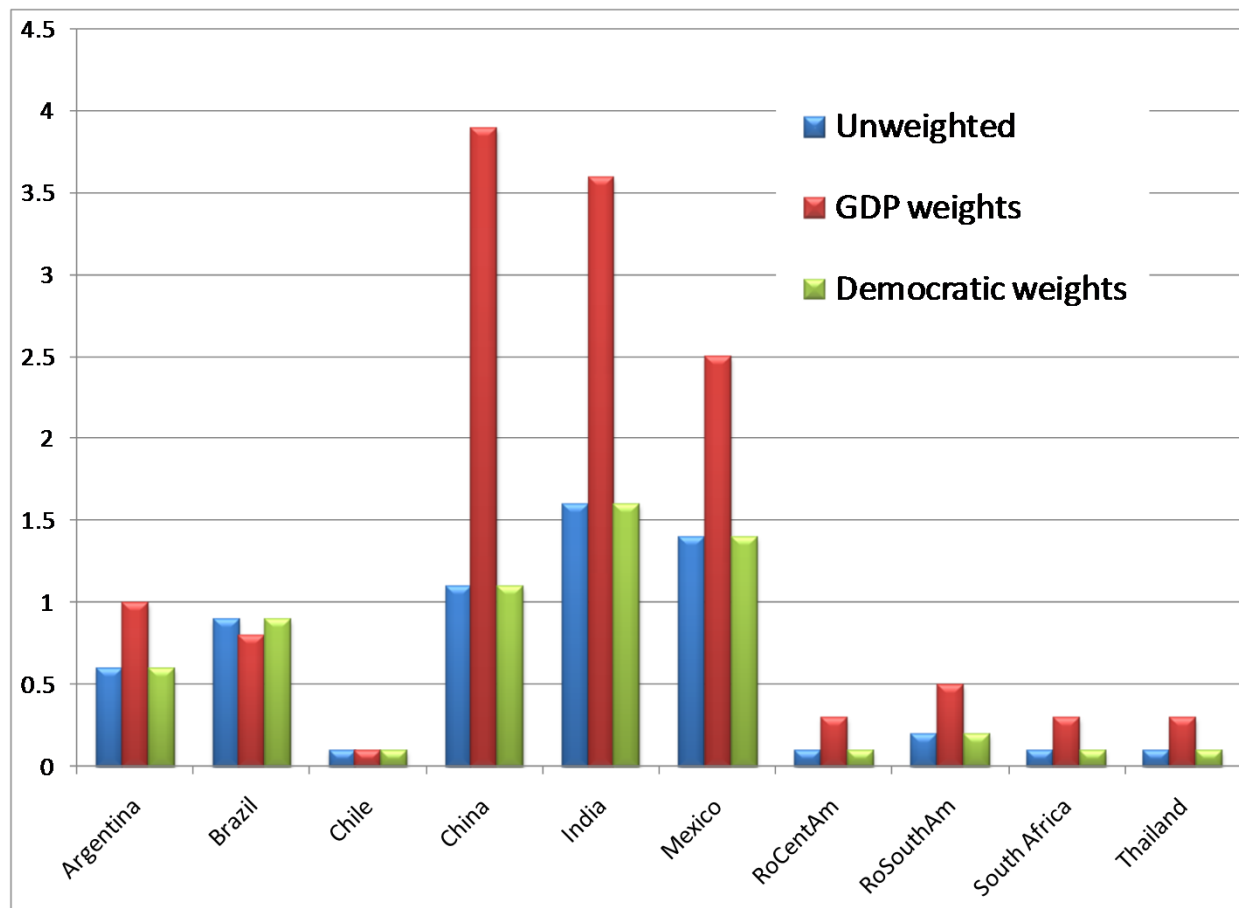
C- G90

D- Effects on the EU and the US

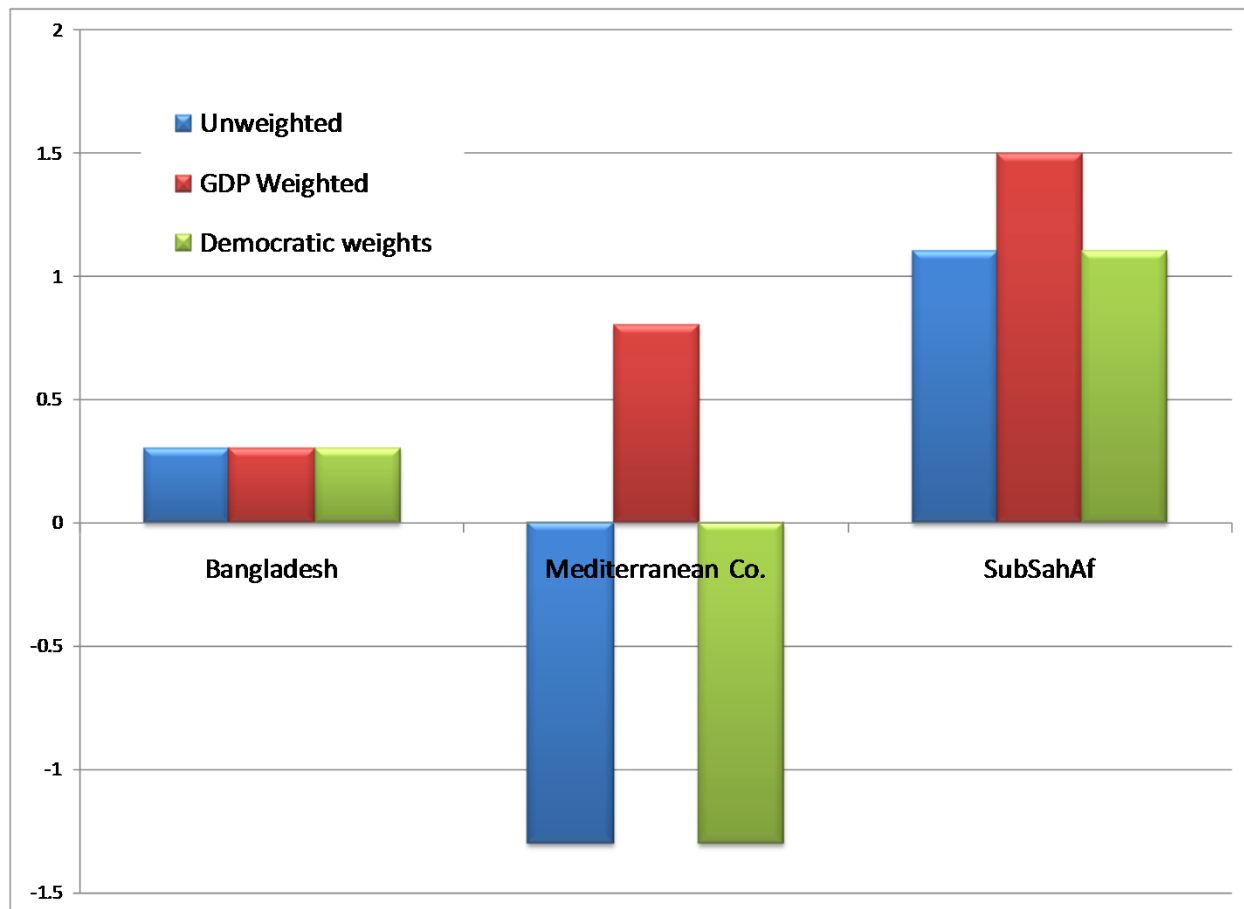
# How to assess the effects of coalitions?

- We assume that all players below 4% of world GDP are excluded
- If a coalition reach this threshold, all its members participate to the negotiations
  - Their individual participation constraint limits the set of feasible outcomes
  - Their weights impact the decision
- We compute the outcome of the game in all configurations
  - Triad (Japan, USA, EU)= no coalition
  - Triad + G10, Triad + G20, Triad + G90
  - Triad + G10 + G20, Triad + G20 + G90
  - Triad + G10 + G20 + G90
- We compare the gains for every players when a coalition appears to the relevant reference situation

# Effects of the G20 coalition on its members' payoffs when it faces the Triad.\$ Bn.



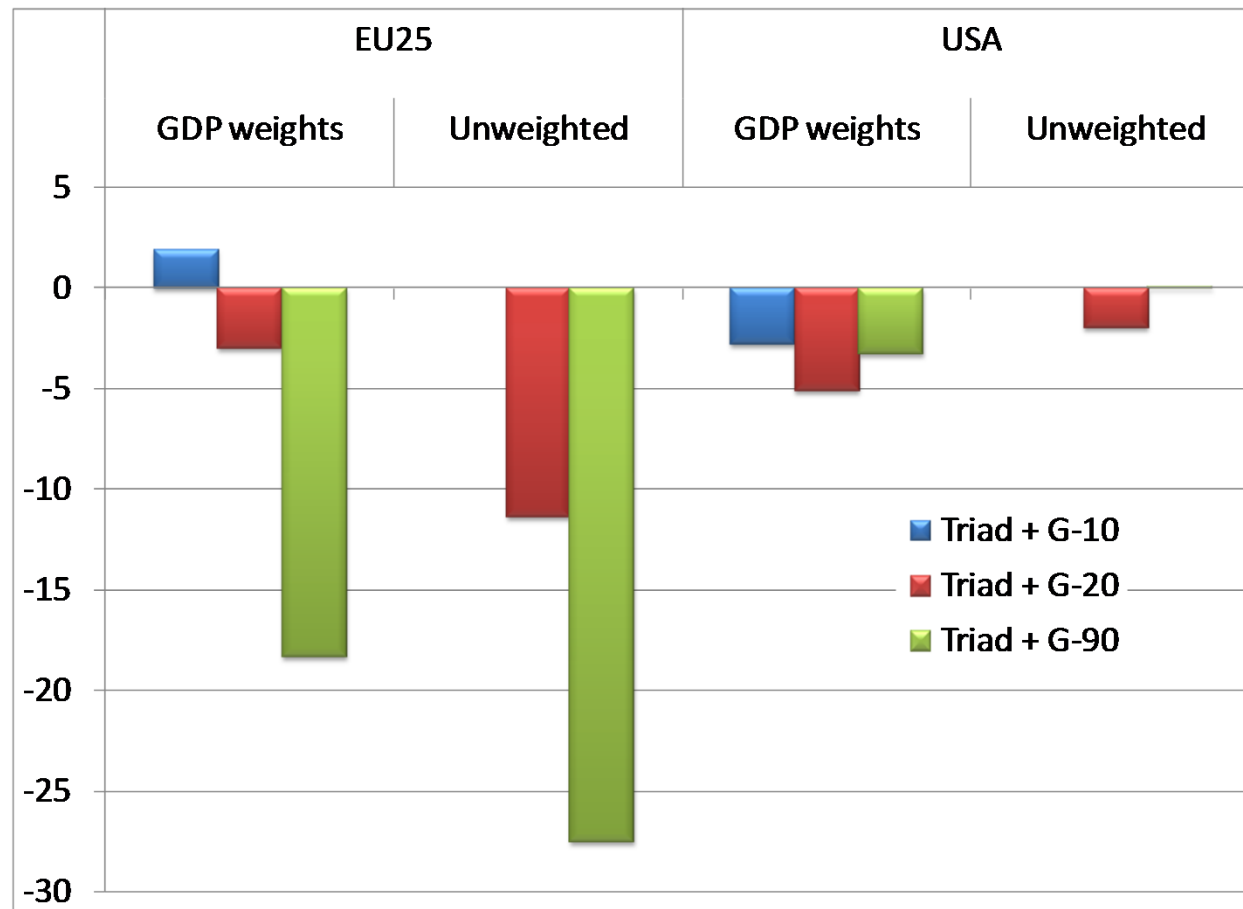
# Effects of the G90 coalition on its members' payoffs when it faces the Triad.\$ Bn.



## Additional remarks

- The G10 is beneficial to its members when it faces the Triad alone, even (*and especially in the GDP weighted case*) for Japan
- The G20 is always beneficial to its members except facing the G90
- The G90 is always detrimental for South Africa
- Mediterranean countries find interests in the G90 only if the Triad faces no other group.

# Effects of the coalitions on the US and the EU. \$ Bn.





# Conclusions

Is our analysis validated by the evolution of negotiations?



## 1 - The Doha round is still difficult to conclude

- Failure of the 2008 mini-ministerial
- Failure of the organization of a ministerial meeting in Geneva in December 2008
- No clear schedule for 2009
- The DDA is still not a priority for the US (weak gains).





## 2 - The small players are excluded from trade talks

- The Hong Kong declaration has proposed:
  - No liberalization required for the LDCs
  - A LDC initiative to provide new market access opportunities for these countries' exports
- Subsequent modalities has created a *de facto* category for Small and Vulnerable economies leading to no liberalization for such countries



## 3- Aid For Trade as a side payment

- Will target in priority
  - LDCs
  - SVEs
- Will help to compensate Preference Erosion

## 4 - Flexibility is introduced

- To take care of different country specificities
- by limiting liberalization
  - Sensitive and special products

*Or*

- By deepening liberalization
  - Sectoral initiative

*And*

- Taking care of regional integration schemes (MERCOSUR, SACU, CARICOM, CEMAC)

## 5- Coalitions have shaped the negotiations

- G-20 remains the main player but its heterogeneity has led Brazil and India to go in a different direction in July 2008
- Snapshot on the evolution of agricultural negotiations

