Construction of USAGE-ITC

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Theoretical starting point is MONASH

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USAGE-ITC will be a framework for:

- estimating changes in technologies and consumer preferences (***historical closure***);
- explaining historical developments such as rapid growth in the 1990s in US international trade (***decomposition closure***);
- forecasting industrial, regional, occupational and household variables (***forecast closure***); and
- projecting policy-induced deviations from forecast paths (***policy closure***).

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USAGE-ITC is detailed to facilitate:

- **general purpose use; and**
- **adjustment analysis**

Distinctive aspects of the MONASH / USAGE-ITC theory

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- ***equations and variables to facilitate historical and forecasting applications***

$$X(i,s,j) = Z(j)*\psi[\text{prices}, A(i), TWIST(i)]$$

$$TWIST(i) = FTWIST(i) + FFTWIST$$

$$LG(q) = \Sigma_{j \in G(q)} L(j)$$

$$LPROD(j) = \Sigma_{q \in LABG} DLG(j,q)*FLPRODG(q) + FLPROD(j)$$

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- ***equations and variables to facilitate decomposition applications***

$$NFLF_{98} = \psi\,(NFLF_{92}, KTOT_{98}/KTOT_{92}, GNP_{98}/GNP_{92}, \Phi_{98}/\Phi_{92})$$

- ***equations and variables to facilitate policy applications***

$$\left[\frac{WR}{WR_f} - 1\right] = \left[\frac{WR_{lag}}{WR_{f,lag}} - 1\right] + \alpha\left[\frac{LTOT}{LTOT_f} - 1\right]$$

- ***treatments of: the balance of payments; foreign asset/liability accumulation; capital supply and investment; and non-standard activities, e.g. trade in communication services***

The contribution of USAGE-ITC will depend on effort in database preparation

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US has excellent data for detailed CGE modeling

- 500 order input-output table for 1992 (BEA)
- time series of 192 order input-output tables for 1983 to 2000 in constant and current prices (BLS)
- exports and imports for 500 commodities and 200 trade partners for 1992, 1998 and other years (ITC)

- 163 commodity by 64 industry matrix of private investment expenditures for 1992 (BEA)
- capital stocks, depreciation and investment for 60 sectors for 1925 to 2001 (NIPA tables, BEA)
- time series of employment by 700 occupations and 192 industries (BLS)
- time series of employees and self employed by 60 sectors (NIPA tables, BEA)
- detailed balance of payments (BEA)

Figure 1: BEA 1992 input-output table

		Absorption Matrix						
		Prod-ucers	Invest-ors	House-holds	Exports	Govern-ment	Invent-ories	-Im ports
	Size	$\leftarrow I \rightarrow$	$\leftarrow 1 \rightarrow$	$\leftarrow 1 \rightarrow$	$\leftarrow 1 \rightarrow$	$\leftarrow 35 \rightarrow$	$\leftarrow 1 \rightarrow$	$\leftarrow 1 \rightarrow$
Comm-odity flows	$\uparrow$ C $\downarrow$	PV1	PV2	PV3	PV4	PV5	PV6	-PVM
Margins	$\uparrow$ $C \times N$ $\downarrow$	MAR1	MAR2	MAR3	MAR4	MAR5	MAR6	0
Labor	$\uparrow$ 1 $\downarrow$	LAB						
Taxes	$\uparrow$ 1 $\downarrow$	TAX0						
Other value added	$\uparrow$ 1 $\downarrow$	OVA						

C = Number of commodities (= 483)
I = Number of industries (= 493)
N = Number of commodities used as margins (= 8)

Figure 2: USAGE-ITC input-output table

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		Absorption matrix					
		1	2	3	4	5	6
		Prod-ucers	Invest-ors	House-holds	Exports	Govern-ment	Inven-tories
	Size	← I →	← I →	← 1 →	← 1 →	← 1 →	← 1 →
Basic Flows	↑ $C \times S$ ↓	BAS1	BAS2	BAS3	BAS4	BAS5	BAS6
Margins	↑ $C \times S \times N$ ↓	MAR1	MAR2	MAR3	MAR4	MAR5	MAR6
Sales Taxes	↑ $C \times S$ ↓	TAX1	TAX2	TAX3	TAX4	TAX5	TAX6
Labor	↑ M ↓	LAB0CCIND					
Capital	↑ 1 ↓	CAPITAL					
Land	↑ 1 ↓	LAND					
Other Costs	↑ 1 ↓	OTHCOST					
Production Taxes	↑ 1 ↓	TAX0					

C = Number of commodities
I = Number of industries

S = 2; domestic and imported,
M = Number of occupation types

N = Number of comod. used as margins

Detailed import data

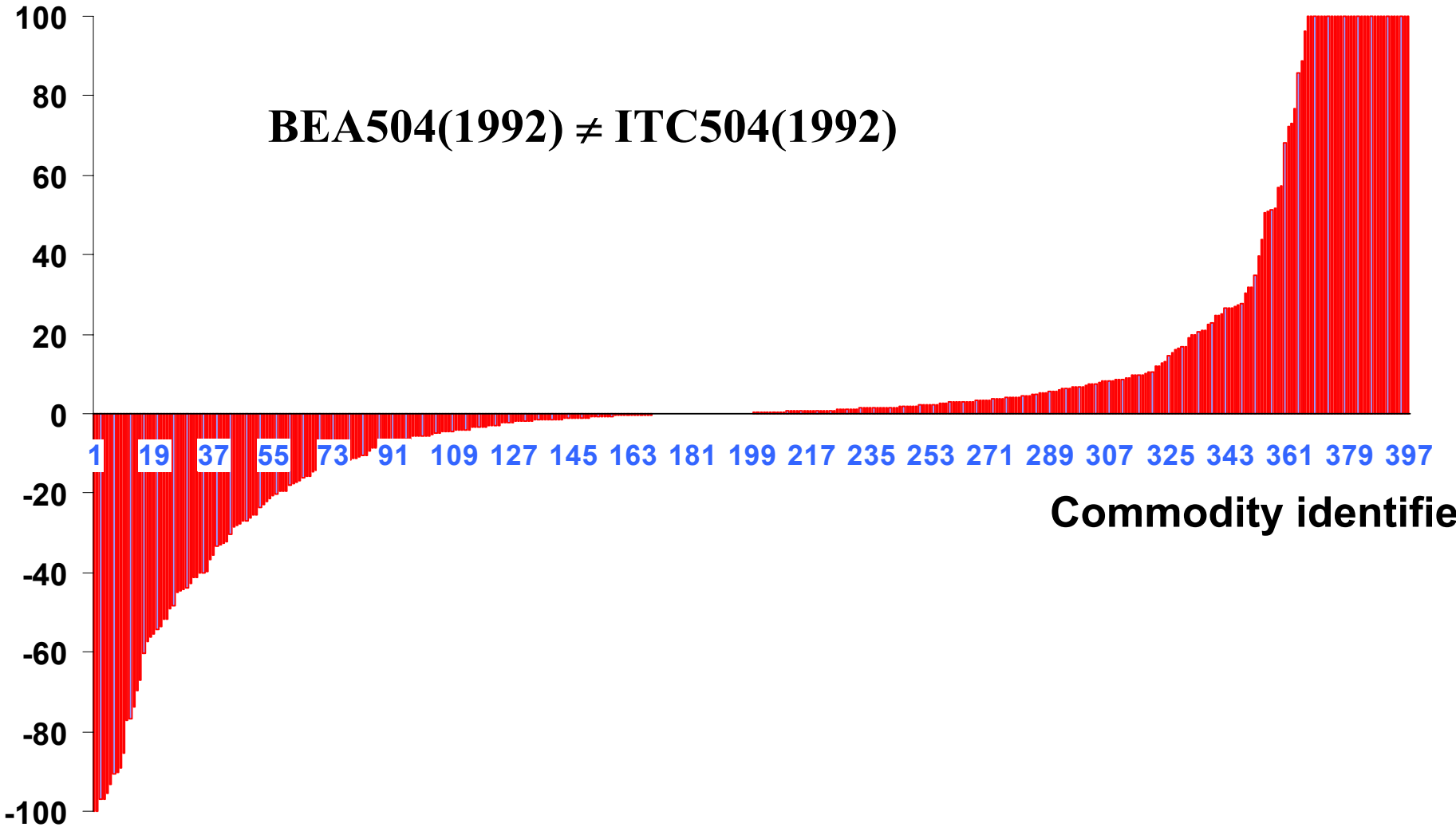
BEA192(1992) = BLS192(1992)

BEA192(1992) ≠ ITC192(1992)

BEA504(1992) ≠ ITC504(1992)

| BLS192(1992) - ITC192(1992) | < | BLS192(1998) - ITC192(1998) |

Imports for 1992: difference between ITC and BEA as % of BEA



What's to be done?

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Electrical equipment imports (landed-duty-paid, $million)

	BEA 92		ITC 92		ITC 98	
commodity	Imports	Duty	Imports	Duty	Imports	Duty
C330 ElectIndApp	4	23.5	1058	25.5	25	0.8
C351 ElectMachnec	1946	62.8	1089	35.4	5350	73.5
Total	*1950*	*86.3*	*2147*	*60.9*	*5375*	*74.3*

Concluding remarks

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Statistical agencies design input-output tables for input-output models

Statistical agencies could produce more CGE-friendly data sets