

Thoughts on the International Data

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November 2005

Three Uses of the International Trade Data

■ Macro-Economic Time Series Analysis

- ◆ *What role do imports and exports play in the cycle of GDP and employment?*

■ Cross-country Comparisons of Performance at the Sectoral Level

- ◆ *What is the long-run impact of international trade on wages and working conditions?*

■ Studies of Multi-National and other businesses

- ◆ *Is the United States using and maintaining it's intellectual assets most effectively?*

I. Macro Times Series Analysis of Imports and Exports



It is Difficult to Interpret Changes in
Imports

When We Import More, Do We:

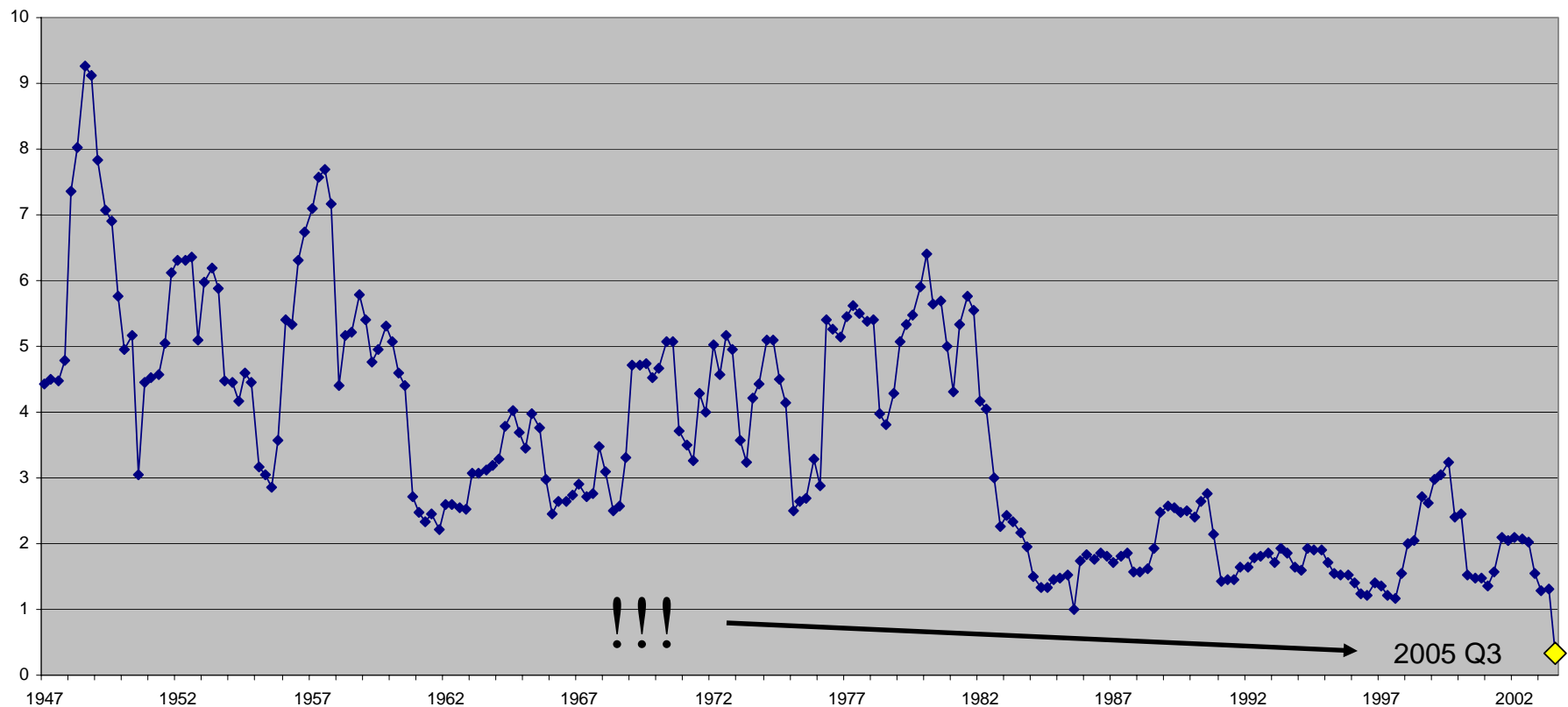
- Increase Inventories
 - ◆ Competing imports?
 - ◆ Non-competing imports?
- Produce Less
 - ◆ Consumer Durables?
 - ◆ Consumer Non-durables?
 - ◆ Equipment and Software?

With current accounting, the answer has to come from correlations

Speaking of Correlations

What Accounts for the Extraordinary Recent Stability of GDP Growth?

Eight-quarter Standard Deviation of GDP growth



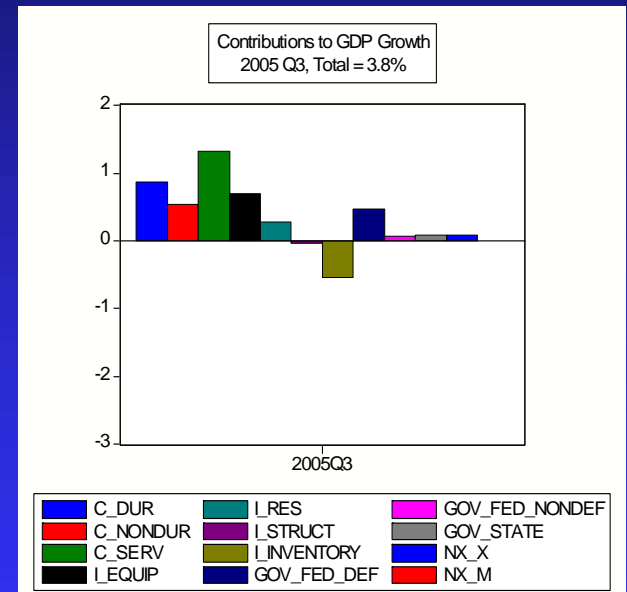
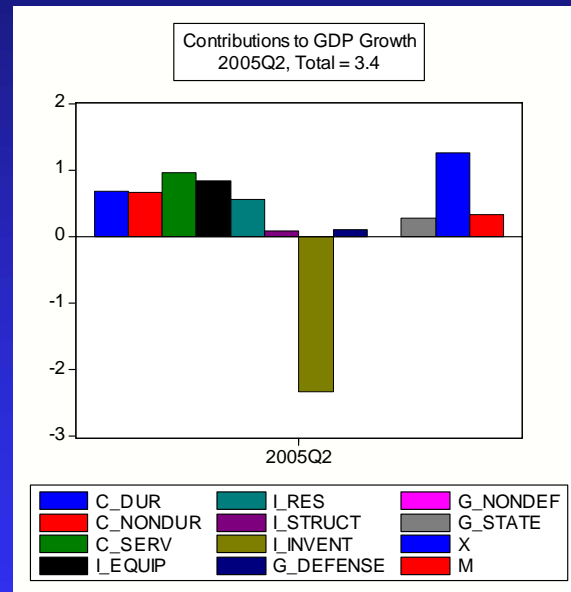
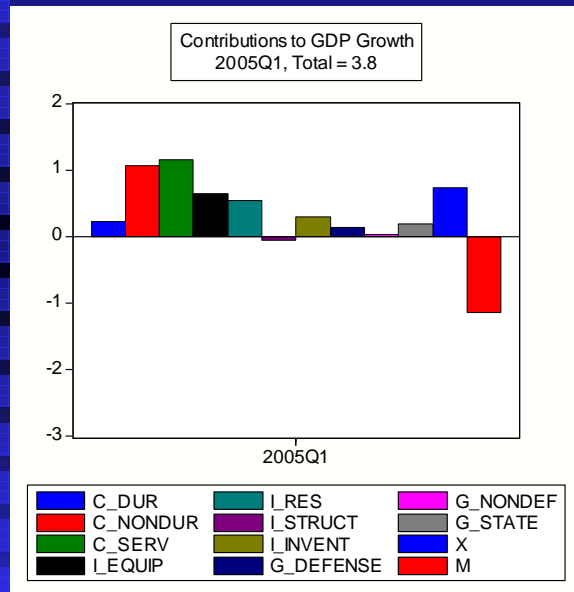
Contributions to GDP Growth

Are the Components of GDP More Stable?

(Answer: Not that much – it must be covariances)

Means and Standard Errors of Contributions to GDP: Two 8 quarter periods							
	1993:1 1994:4			2003:4 2005:3			
	Mean	Std. Dev.	Var	Mean	Std. Dev.	Var	SD dif
GDP	3.33	1.84	3.39	3.70	0.35	0.12	-1.49
C_DUR	0.66	0.35	0.12	0.43	0.35	0.12	0.00
C_NONDUR	0.61	0.33	0.11	0.83	0.29	0.08	-0.04
C_SERV	1.02	0.41	0.17	1.28	0.29	0.09	-0.12
I_EQUIP	0.87	0.52	0.27	0.82	0.24	0.06	-0.29
I_RES	0.27	0.37	0.14	0.44	0.28	0.08	-0.09
I_STRUCT	0.03	0.31	0.09	0.04	0.10	0.01	-0.21
I_INVENTORY	0.41	1.39	1.95	-0.11	0.98	0.96	-0.41
NX_X	0.72	0.61	0.38	0.75	0.47	0.22	-0.14
NX_M	-1.19	0.39	0.15	-1.17	0.87	0.75	0.48
GOV_FED_DEF	-0.35	0.57	0.32	0.25	0.25	0.06	-0.32
GOV_FED_NONDEF	-0.03	0.11	0.01	0.03	0.12	0.02	0.01
GOV_STATE	0.29	0.15	0.02	0.11	0.15	0.02	0.00
Sum			3.74			2.47	
GDP			1993:1 1994:4			2003:4 2005:3	
Stnd Error, if no correlation			1.93			1.57	
Actual SE			1.84			0.35	

Look at the Amazing Difference Between 2005 Q1 and Q2



Something funny about the relationship between inventories and imports.

Correlation Structure of Contributions to GDP growth 1993 and 1994

Larger Negatives in Red, Larger Positives in Green

1993:1 1994:4	Imports	Inventor	Durable	Resider	Exports	Service	State	Structur	Equipm	Defense	Nondefe	Nondurable
Imports												
Inventory	-0.37	1.00										
Durables	-0.04	0.16	1.00									
Residencs	-0.24	0.21	-0.13	1.00								
Exports	-0.83	0.02	0.11	-0.02	1.00							
Services	0.50	-0.10	-0.21	0.53	-0.37	1.00						
State	-0.54	-0.37	-0.39	-0.09	0.56	-0.39	1.00					
Structures	-0.67	0.11	-0.05	0.36	0.59	-0.21	0.54	1.00				
Equipment	-0.07	0.01	0.86	-0.22	0.30	-0.21	-0.42	-0.08	1.00			
Defense	-0.52	-0.51	-0.34	0.21	0.71	-0.04	0.78	0.51	-0.14	1.00		
Nondefense	0.24	-0.28	0.43	-0.64	0.28	0.02	-0.13	-0.24	0.59	0.00	1.00	
Nondurables	-0.02	-0.12	0.34	0.01	0.20	0.25	0.27	0.28	0.05	0.15	0.40	1.00

Correlation Structure of Contributions to GDP growth Eight Most Recent Quarters

Larger Negatives in Red, Larger Positives in Green

2003:4	2005:3												
	Imports	Inventor	Durable	Resider	Exports	Services	State	Structur	Equipm	Defense	Nondefe	Nondurable	
Imports	1.00												
Inventory	-0.87	1.00											
Durables	0.84	-0.72	1.00										
Residencs	-0.24	0.19	-0.64	1.00									
Exports	-0.42	0.10	-0.62	0.41	1.00								
Services	-0.21	0.23	0.12	-0.74	0.08	1.00							
State	0.42	-0.54	0.22	0.22	-0.17	-0.76	1.00						
Structures	-0.30	0.05	-0.28	0.44	0.21	-0.58	0.53	1.00					
Equipment	0.09	-0.16	0.37	-0.13	-0.52	-0.36	0.45	0.48	1.00				
Defense	0.23	0.00	0.31	-0.22	-0.20	0.45	-0.72	-0.72	-0.21	1.00			
Nondefense	-0.21	0.26	-0.23	0.21	-0.46	-0.38	0.31	0.27	0.30	-0.37	1.00		
Nondurables	-0.20	0.13	-0.02	-0.48	-0.15	0.44	-0.14	-0.46	0.08	0.02	0.22	1.00	

Direct Comparison

1993:1 1994:4			
	Imports	Inventory	Durables
Imports			
Inventory	-0.37	1.00	
Durables	-0.04	0.16	1.00

2003:4 2005:3			
	Imports	Inventory	Durables
Imports	1.00		
Inventory	-0.87	1.00	
Durables	0.84	-0.72	1.00

What Makes the Contribution of Imports Negatively Correlated with Inventories and Positively Correlated with Consumer Durables?

- Are inventories mostly imported?
- Do consumers choose between US made durables and non-competing imported nondurables?

Problem:

Though GDP is “Production” the components are “Sales”

- $\text{Production} = \text{Domestic Sales} + \text{Changes in Inventory} + \text{Exports} - \text{Imports}$

Suggestion:

Use the Same Accounting for the Components as for GDP overall

$$\text{Production} = \text{Domestic Sales} + \text{Changes in Inventory} + \text{Exports} - \text{Imports}$$

Allocate Imports, Exports and Changes in Inventories to Consumer Durables, Consumer Nondurables and Equipment/Software.

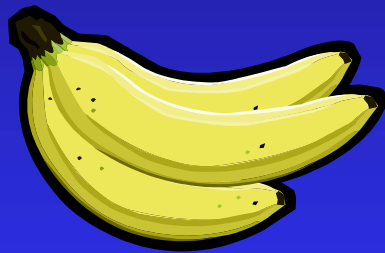
This Can Be Done, Given the Product Detail for Imports and Exports

Table 4.2.5. Exports and Imports of Goods and Services by Type of Product		
[Billions of dollars]		
Bureau of Economic Analysis		
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Line		2004
24	Imports of goods and services	1797.8
25	Imports of goods\1\	1495.9
26	Foods, feeds, and beverages	62.1
27	Industrial supplies and materials, except petroleum and pro	225.1
28	Durable goods	119.2
29	Nondurable goods	105.9
30	Petroleum and products	180.5
31	Capital goods, except automotive	343.5
32	Civilian aircraft, engines, and parts	24.3
33	Computers, peripherals, and parts	88.6
34	Other	230.5
35	Automotive vehicles, engines, and parts	228.2
36	Consumer goods, except automotive	373.1
37	Durable goods	197.6
38	Nondurable goods	175.4
39	Other	83.4
40	Imports of services\1\	301.9
41	Direct defense expenditures	29.3
42	Travel	65.6
43	Passenger fares	23.7
44	Other transportation	54.2
45	Royalties and license fees	23.9
46	Other private services	95.7
47	Other	9.5

It Must Have Been Done Already

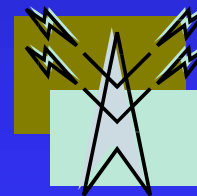
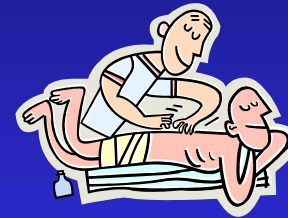
Code	Industry Title	1998
Value added (Millions of dollars)		
VA	Gross domestic product	8746997
VA	Private industries	7652501
VA	Agriculture, forestry, fishing, and hunting	102395
VA	Farms	78901
VA	Forestry, fishing, and related activities	23494
VA	Mining	74785
VA	Oil and gas extraction	35173
VA	Mining, except oil and gas	27031
VA	Support activities for mining	12581
VA	Utilities	180806
VA	Construction	374387
VA	Manufacturing	1343850
VA	Durable goods	806865
VA	Wood products	29358
VA	Nonmetallic mineral products	42327
VA	Primary metals	49422
VA	Fabricated metal products	112705
VA	Machinery	111472
VA	Computer and electronic products	165673
VA	Electrical equipment, appliances, and components	44735
VA	Motor vehicles, bodies and trailers, and parts	108827
VA	Other transportation equipment	63344
VA	Furniture and related products	29101
VA	Miscellaneous manufacturing	49902
VA	Nondurable goods	536985
VA	Food and beverage and tobacco products	137539
VA	Textile mills and textile product mills	27127
VA	Apparel and leather and allied products	26049
VA	Paper products	52154
VA	Printing and related support activities	46508
VA	Petroleum and coal products	30643
VA	Chemical products	153362
VA	Plastics and rubber products	63603

New Category: Non-competing Imports



New Category?

- Goods
- Services
- Wire Transmissions



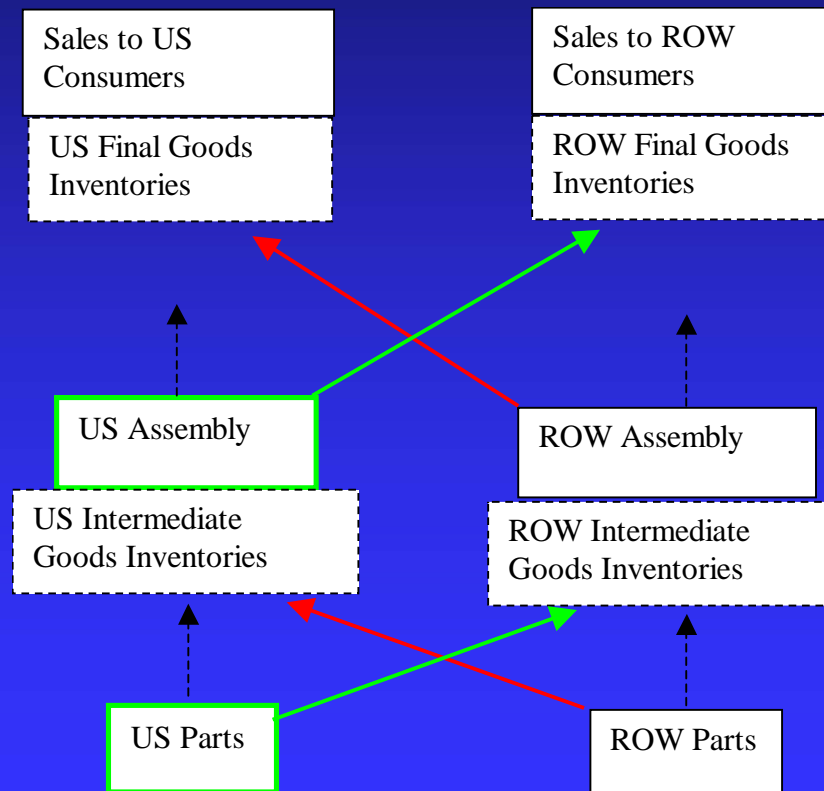
Where does the time spent
on the Internet enter GDP?

Proposed NIPA Account

(This work is mostly done.)

		Sales	Changes in Inventory	Exports	Imports
Final Goods and Services					
	Consumer Durables				
	Consumer Nondurables				
	Consumer Services				
	Consumer Wire Transmissions				
	Noncompeting (Imports of) Final Goods and Services	x	y	0	x+y
Business Sector Investment					
	Equipment and Software				
	Noncompeting (Imports of) Equipment and Software	x	y	0	x+y
	Structures				
Government					

It's not just final goods; there are supply chain issues too.



Proposed Accounts:

Tracking Inventories in ROW

						ROW
		Sales	Changes in Inventory	Exports	Imports	Changes in Inventory
Final Goods and Services						
Consumer Durables						
Consumer Nondurables						
Consumer Services						
Consumer Wire Transmissions						
Noncompeting (Imports of) Final Goods						
Business Sector Investment Spending						
Equipment and Software						
Noncompeting (Imports of) Equipment and Software						
Goods in Process(e.g. Parts)						
Noncompeting (Imports of) Goods in Process						
Structures						
Government						

Cross-National Comparisons?

- For many countries and many products
 - ◆ Prices
 - ◆ Employment
 - ◆ Production
 - ◆ Imports
 - ◆ Exports



OECD STAN database

Multinationals

- Link BEA with LRD