

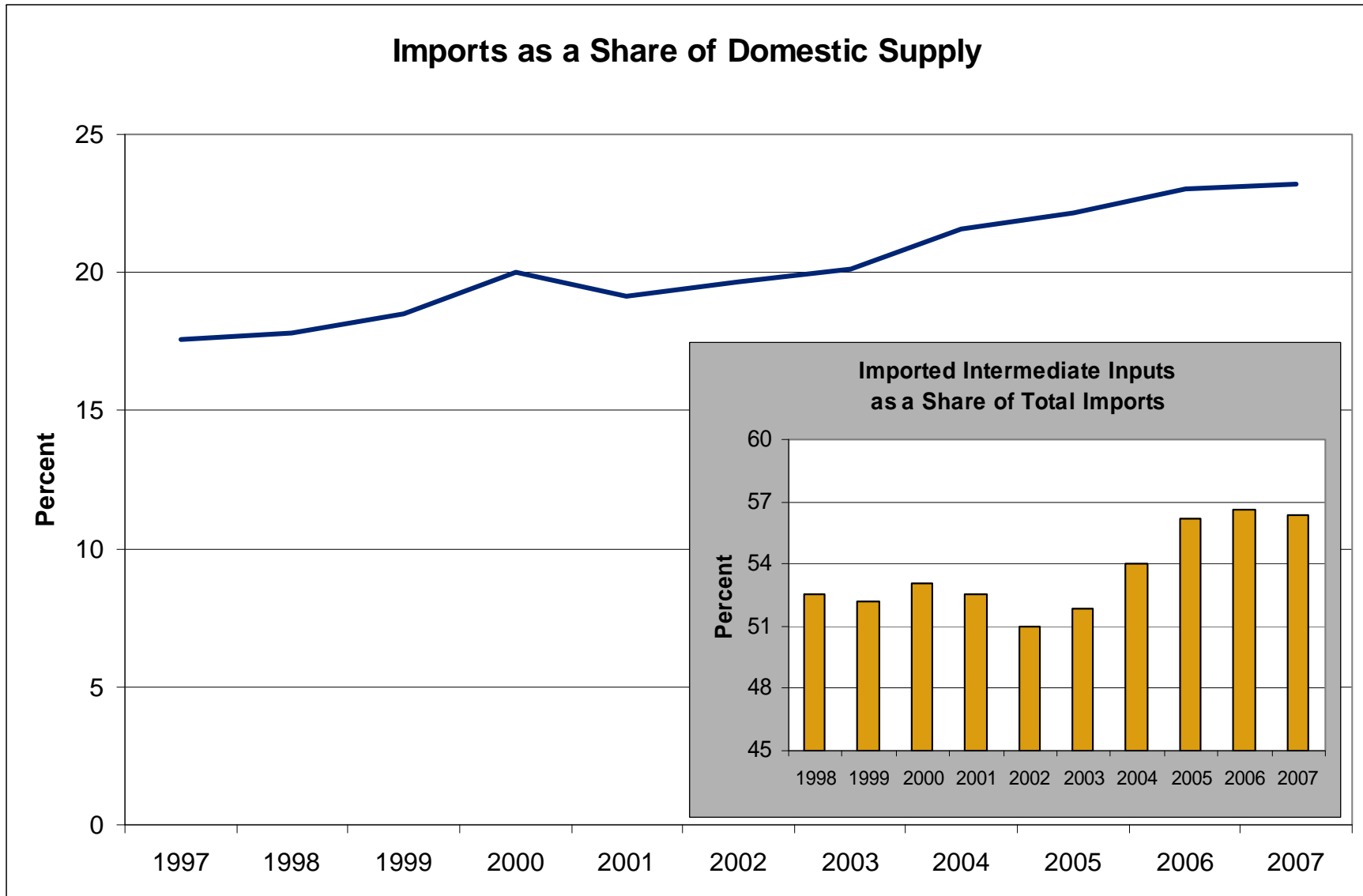


# Imported Inputs and Industry Contributions to Economic Growth: An Assessment of Alternative Approaches

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# Trends in Imports



The top banner features a blue background with a bar chart on the left showing various data points. The BEA logo is in the top right corner. The main title "What Do We Do?" is centered in large white font.

# What Do We Do?

- Import content of intermediate inputs
  - “Import Comparability” assumption from the Annual Industry Accounts
  - Import shares constructed from survey data on multinational companies (MNCs)
- Behavior of import prices
  - Threshold of import price adjustments to impact Real GDP and real value added for manufacturing?



# Annual Industry Accounts

- Framework for studying structural change and input substitution
  - Balanced input-output accounts are consistent with NIPAs (GDP)
  - KLEMS cost categories of energy, materials, and purchased services disaggregated into imported and domestic products
    - Separate deflation of imported and domestic inputs in calculation of real value added
    - Analysis on role of imports



# International Accounts

- MNC data provides information on total imports by U.S. parent firms
  - Accounts for about 60-65% of all imported intermediates
- Link foreign affiliates to U.S. parents for industry and commodity classification
  - Industry (commodity) classification based on ISI of the U.S. parent (foreign affiliate)
  - Imports from unaffiliated firms assumed to resemble affiliates

# Import Shares by Industry, 2002 [percent]

Industry Group	International Accounts	Annual Industry Accounts
Manufacturing	20.7	16.8
Distributive services/1/	3.3	7.0
Information	4.2	5.3
Finance, insurance, real estate, rental, and leasing	0.9	5.0
Professional and business services	2.3	3.9
Other industries/2/	6.5	6.4
Addenda		
Private goods-producing industries/3/	17.7	14.9
Private services-producing industries/4/	3.5	5.4

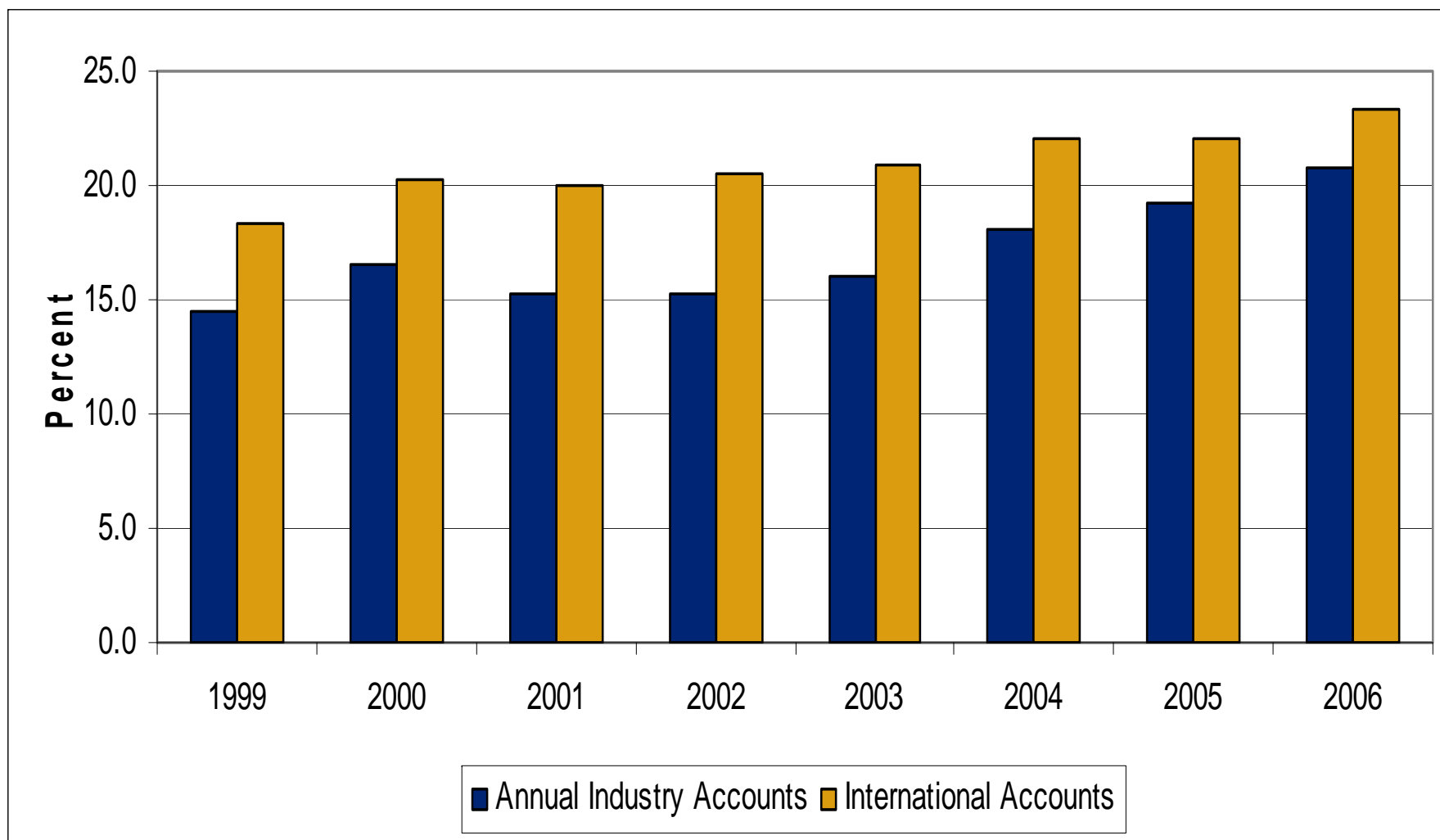
/1/ Consists of wholesale trade; retail trade; transportation and warehousing

/2/ Consists of agriculture, forestry, fishing, and hunting; mining; construction; educational services; health care and social assistance; arts, entertainment, and recreation; accommodation and food services; and other services, except government

/3/ Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

/4/ Consists of utilities; wholesale trade; retail trade; transportation and warehousing; information; finance and insurance; real estate and rental and leasing; professional, scientific and technical services; management of companies and enterprises; administrative and waste management services; educational services; health care and social assistance; arts, entertainment, and recreation; accommodation and food services; and other services, except government.

# Imported Materials Inputs as a Share of Intermediate Inputs, Manufacturing

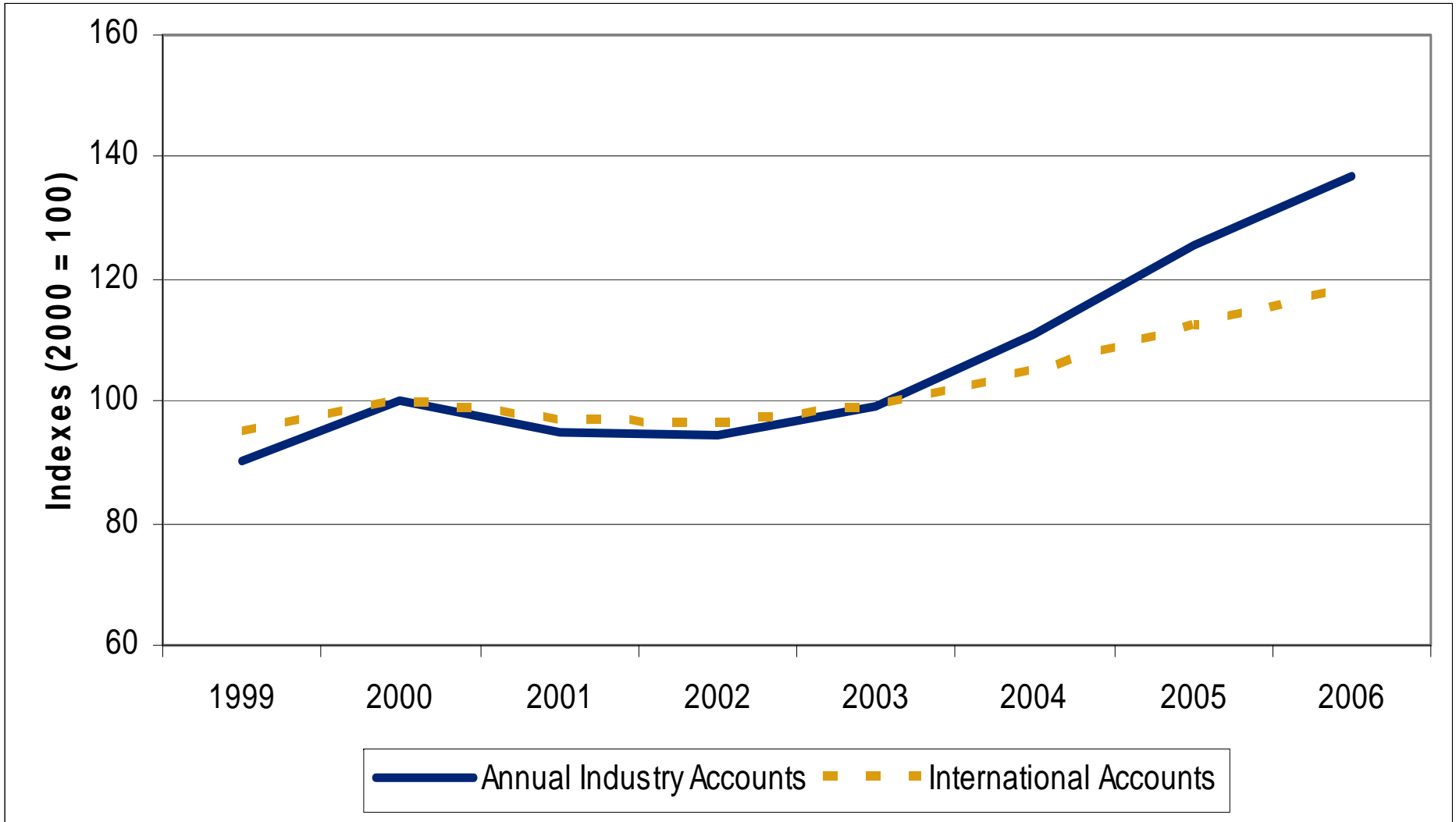


# Imported Input Shares for Manufacturing

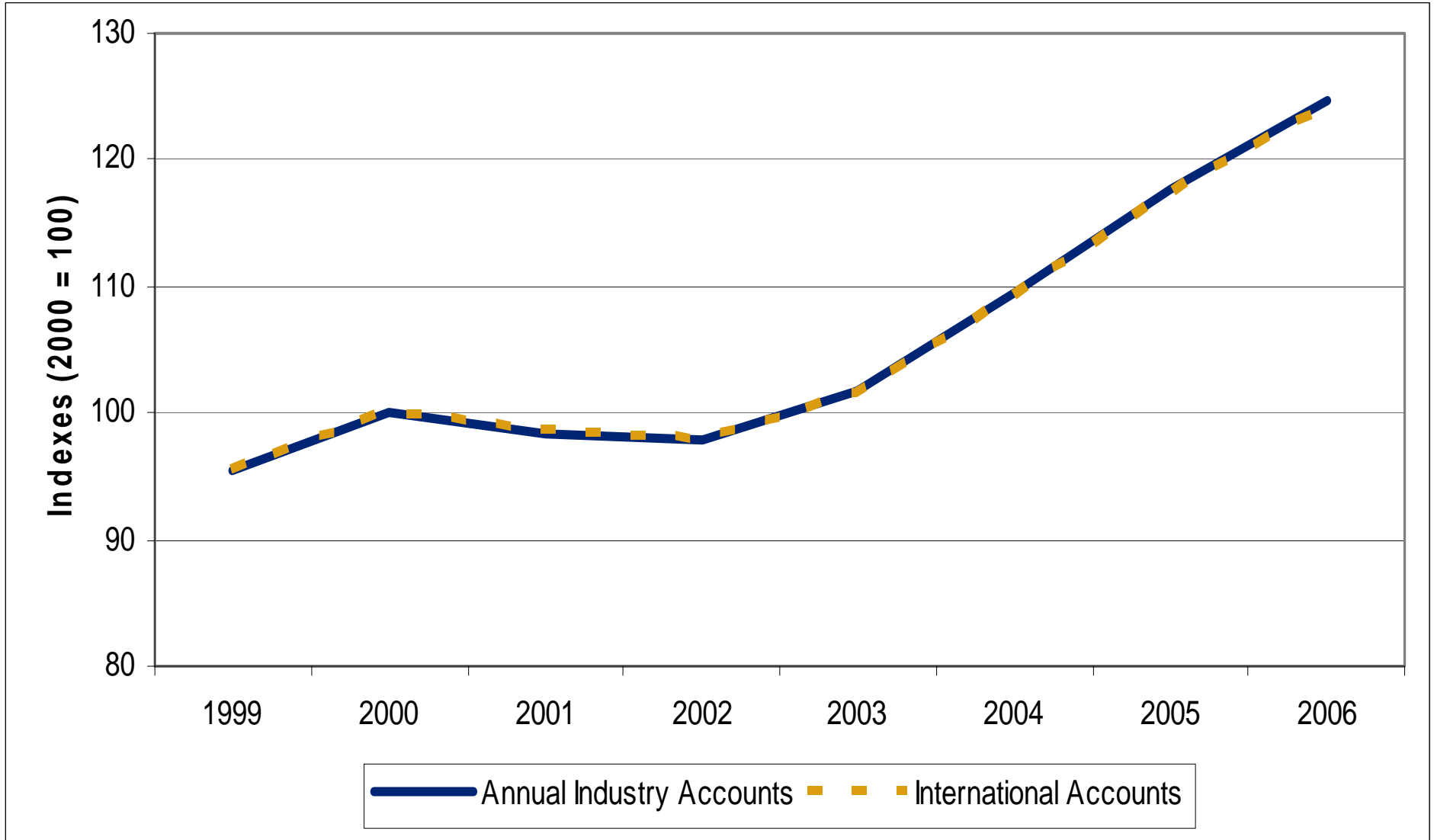
Commodity	International Accounts	Annual Industry Accounts
Oil and gas extraction	36.9	63.6
Computer and electronic product manufacturing	70.6	42.9
Primary metal manufacturing	8.5	20.7
Chemical manufacturing	26.4	13.4
Machinery manufacturing	26.2	29.0
Fabricated metal product manufacturing	3.8	10.2
Paper manufacturing	2.6	13.8
Electrical equipment, appliance, and component manufacturing	24.7	35.2
Food manufacturing	9.9	12.2
Wood product manufacturing	16.2	24.0



# Price Indexes for Imported Materials Inputs, Manufacturing



# Price Indexes for Total Intermediate Inputs, Manufacturing

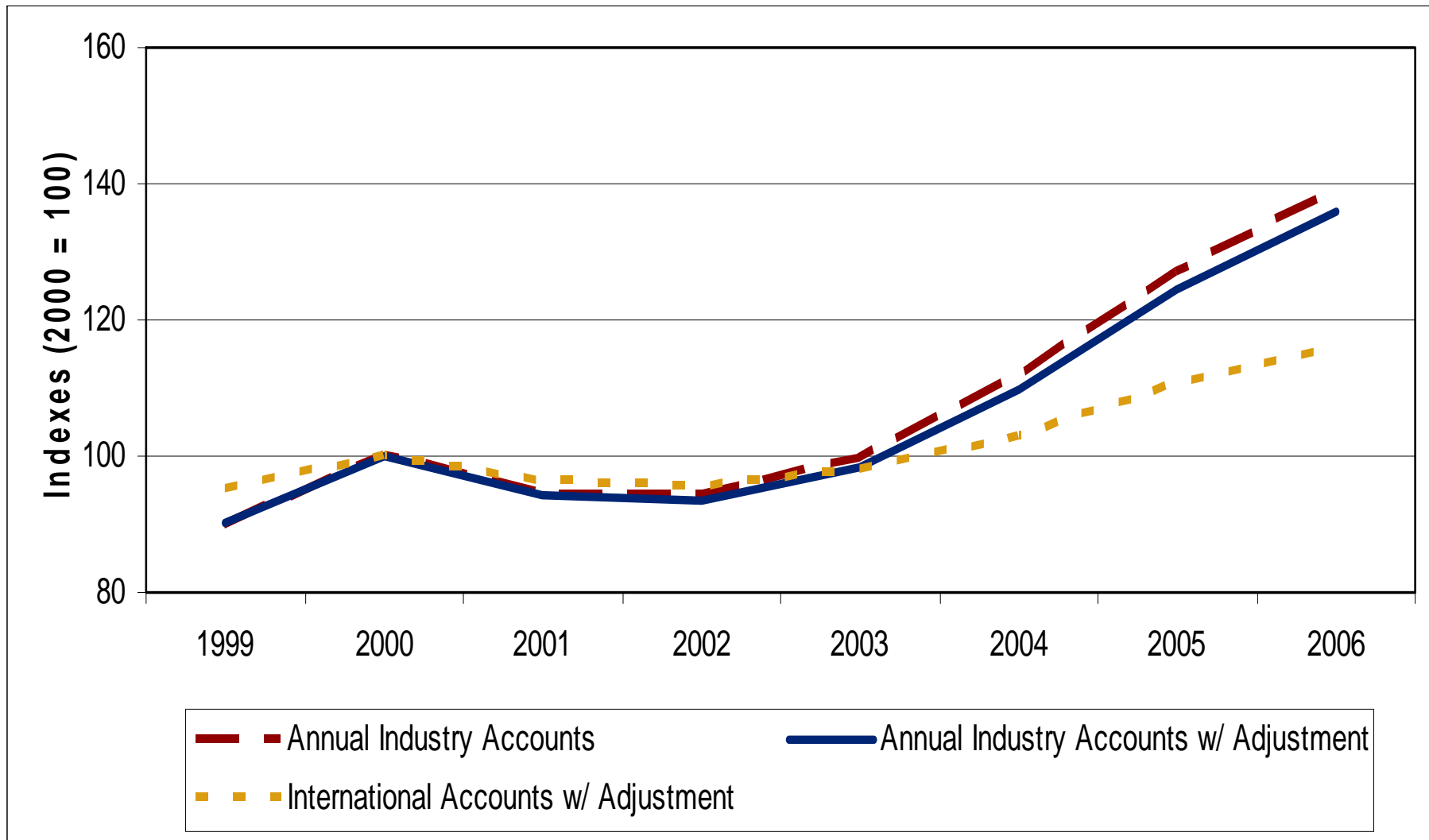




# Import Price Simulations

- Compares current (baseline) estimates with a series of bias adjustments
  - Annual methodology uses import price indexes from BLS
  - 57 percent of imported intermediates covered; domestic prices used elsewhere
- First adjustment accounts for average price difference between domestic and imported price indexes (0.4 percent)
- Subsequent adjustments from 1-to-5 %

# Price Indexes for Imported Intermediate Inputs w/ 0.4% adjustment, Manufacturing



# Average Annual Growth in Real GDP with bias adjustments, 1999-2006

Industry	Baseline	0.04%	1%	3%	5%
<b>All Industries</b>					
Annual Industry Accounts	2.6	2.6	2.5	2.4	2.2
International Accounts	2.6	2.5	2.5	2.3	2.2
<b>Manufacturing</b>					
Annual Industry Accounts	2.2	2.0	1.8	1.2	0.5
International Accounts	2.0	1.9	1.6	0.9	0.1
<b>Computer and electronic products manufacturing</b>					
Annual Industry Accounts	17.2	17.1	16.8	15.8	14.9
International Accounts	17.2	17.1	16.8	15.6	14.4
<b>Machinery manufacturing</b>					
Annual Industry Accounts	1.4	1.3	1.2	0.7	0.2
International Accounts	1.4	1.3	1.2	0.9	0.5
<b>Chemical manufacturing</b>					
Annual Industry Accounts	2.6	2.6	2.4	2.0	1.5
International Accounts	2.5	2.4	2.2	1.7	1.1
<b>Oil and gas extraction</b>					
Annual Industry Accounts	-3.4	-3.5	-3.5	-3.7	-3.8
International Accounts	-3.2	-3.2	-3.3	-3.4	-3.6



# Highlights

- The “import comparability” assumption provides a good approximation of imported intermediate inputs
- Given current import prices, differences in import shares by industry have a small effect on real value added growth
- Each one-percent bias adjustment to import prices decreases real GDP growth by 0.08 percentage point



# Where Do We Go From Here?

- Further study on the role of imported inputs and the behavior of import prices
- Better and more complete import price coverage will improve the accuracy of Annual Industry Accounts
  - Improved BLS import price indexes
  - BLS *input* price indexes could be used to deflate intermediate inputs without concern for the sourcing mix