

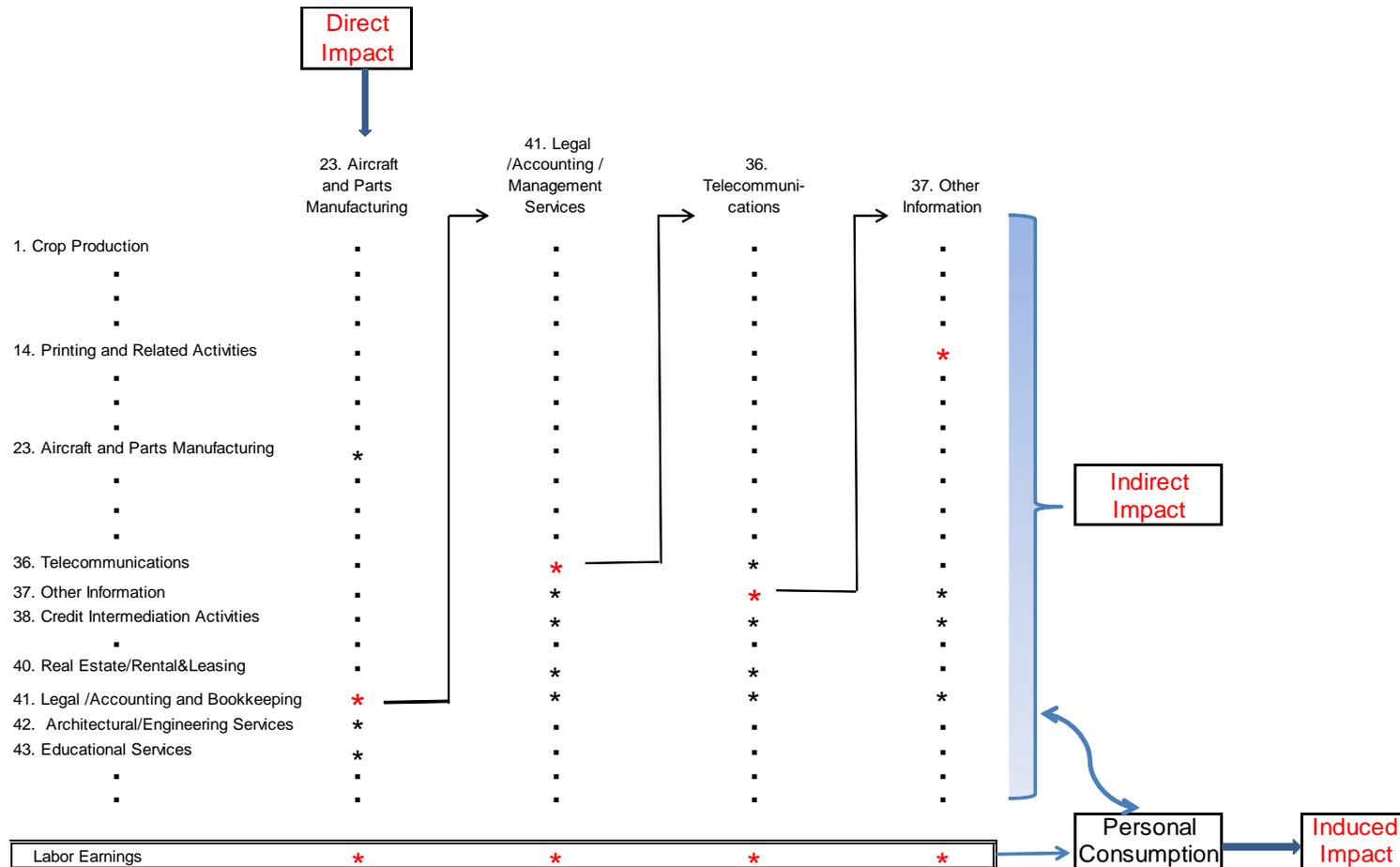


# Input-Output Fundamentals

Commission on State Debt  
October 6, 2011

Marc Baldwin, Ph.D.  
Office of Financial Management  
Marc.Baldwin@OFM.WA.Gov

# Inter-Industry Purchases Measure Indirect and Induced Links/Impact



# Washington Input-Output Table

## *Sample Listing of Industry Inputs*

Input



2002 Washington Input-Output Table (millions of dollars)	9. Construction	23. Aircraft and Parts Manufacturing	48. Food Services and Drinking Places
9. Construction	110.4	140.1	141.5
10. Food, Beverage and Tobacco Manufacturing	0.0	0.2	872.2
12. Wood Product Manufacturing	350.0	2.9	19.2
15. Petroleum and Coal Products Manufacturing	575.4	0.0	34.3
17. Nonmetallic Mineral Products Manufacturing	785.5	0.0	16.0
19. Fabricated Metals Manufacturing	240.0	110.6	3.0
20. Machinery Manufacturing	117.8	11.4	2.0
21. Computer & Electronic Product Manufacturing	11.9	110.1	0.0
23. Aircraft and Parts Manufacturing	0.0	651.1	9.0
26. Furniture Product Manufacturing	252.2	1.8	224.2
28. Wholesale	770.3	193.0	50.3
29. Retail	2014.7	65.4	0.5
32. Truck Transportation	155.9	4.5	18.8
33. Other Transportation/Postal Offices Storage/Transportation/Warehousing Providers	55.5	15.6	20.5
36. Telecommunications	2.6	1.0	4.0
37. Other Information	11.5	64.3	6.1
38. Credit Intermediation and Related Activities	220.6	43.7	52.2
39. Other Finance and Insurance	0.5	1.0	47.4
40. Real Estate and Rental and Leasing	511.9	2.3	95.5
/Management Serv.	82.6	160.1	79.0
Services	262.6	30.6	218.1
43. Educational Services	136.5	246.3	148.5
49. Administrative/Employment Support Services	354.4	167.3	7.0
50. Waste Management/Other/Agr. Services	0.1	188.0	0.0
<b>TOTAL INTERMEDIATE INPUT</b>	186.7	92.7	64.1
<b>VALUE ADDED (including labor)</b>	851.3	38.2	190.7
<b>IMPORTS</b>	8,069.1	2,341.8	2,759.5
<b>Total Purchases</b>	10,290.5	8,483.1	4,459.7
	11,860.8	26,938.2	1,297.7
	30,696.3	38,012.6	8,516.9

# Job Impact Per \$10M Output Increase (2008)

	Construction	Aerospace	Food & Drinking
Resources	1.1	0.3	3.3
Construction	58.9	0.7	2.7
Manufacturing	3.7	16.2	5.6
Aerospace	0.0	15.3	0.0
Wholesale and Retail Trade	14.2	4.7	12.9
Transportation and Utilities	2.9	1.1	3.5
Information & Services	37.8	18.8	230.3
Food and Drinking Places	5.9	3.1	190.6
<b>Total Jobs Impact</b>	<b>118.6</b>	<b>41.9</b>	<b>258.3</b>
<i>Direct</i>	<i>45.1</i>	<i>15.1</i>	<i>183.3</i>
<i>Indirect &amp; Induced</i>	<i>73.5</i>	<i>26.8</i>	<i>75.0</i>

# Employment Impact by Project Type and Phase

Project Name	Project Type		Project Spending			
			FY12	FY13	FY14	FY15
Corps General Investigation-Skokomish	Planning	Pre-Engineering	\$429,000	\$429,000	\$0	\$0
Lacamas Prairie Natural Area 2008	Acquisition	Right-of-Way	\$1,770,011	\$1,770,011	\$0	\$0
Multi-Purpose Sports Turf Field	Development	Construction	\$536,250	\$643,500	\$643,500	\$321,750
Carpenter Creek Estuary Restoration	Restoration	Construction	\$675,728	\$810,874	\$810,874	\$405,437

- 
- 
- 
- 

I-O Employment Multipliers (Jobs per \$M)



Project Name	Job Impact			
	FY12	FY13	FY14	FY15
Corps General Investigation of Skokomish	6.5	6.2	-	-
Lacamas Prairie Natural Area 2008	1.5	1.4	-	-
Multi-Purpose Sports Turf Field	8.1	8.3	7.7	3.8
Carpenter Creek Estuary Restoration	10.3	10.5	9.8	4.8

- 
- 
-

# Issues with Input-Output and Impact Modeling

- Fixed coefficients – same impact with each additional dollar of increased demand.
- Wages and prices don't adjust with increased demand.
- Can only do analysis for detailed industries in the table.
- Cannot account for fundamental changes, only increased sales.
- Localizing the national table creates errors.
- And yet...large macro models have IO assumptions in them and IO is an extremely useful tool.