

Data for Workforce Planning

Greg Wright

Workforce of the Future initiative

BROOKINGS

What is new in data?

- Newly available linked microdata
 - Led by States; tailored to state needs
 - increasingly available to researchers remotely
- Ex 1: linking education and workforce outcomes
 - Can help align community college programs with local workforce needs

What is new in data?

- Ex 2: assess the quality of workforce development programs
- Difficult for participants to make informed decisions
- Need better information on program outcomes
 - Link state data on employment and wages to training program data
 - Examples: Colorado (higher-ed to training link); Minnesota (training to work/UI records)

What is next in data?

- Proliferation of “big data”
 - Job postings; online profiles; cell phone GPS; credit card spending
- Acceleration of data analysis tools, with AI to become more widely used
- Will make big data much more powerful
 - Can identify patterns and relationships (e.g., impacts of policy)
 - Or just document and organize quickly
- Impact on local economic and workforce development could be large

SmartGrowthCities.io

Smart growth strategies

Based on local industry and workforce data, create and evaluate potential economic growth strategies for 384 U.S metropolitan areas and 393 Economic Development Districts (EDDs). Select one to get started.

Select a city



Build an economic growth strategy



Assess your strategy's workforce needs



Evaluate industries and build a growth strategy

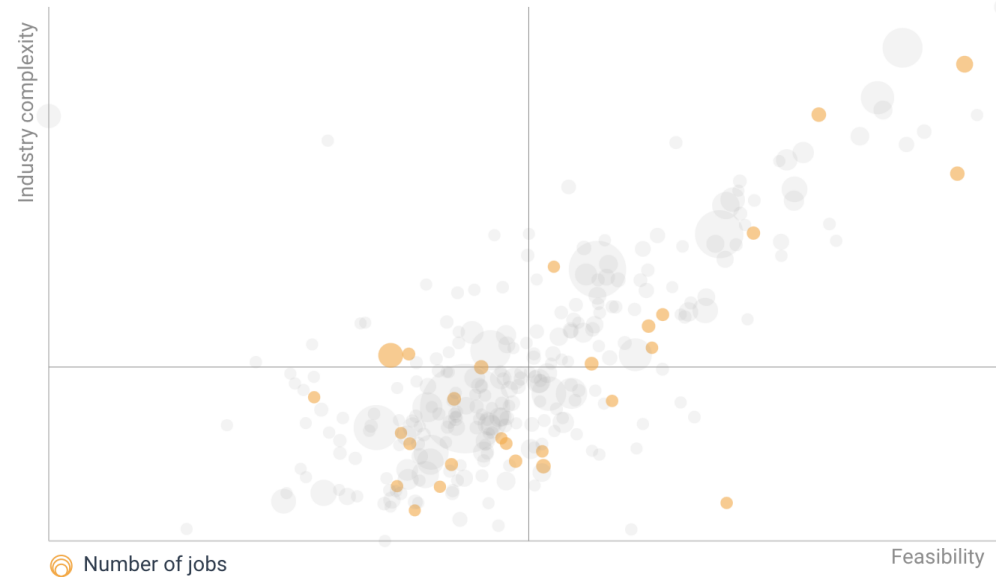
[Scroll to workforce](#)
[Reset all selections](#)

1 X-AXIS: Evaluate the feasibility of each industry for Atlanta Regional Commission (EDD)

2 Y-AXIS: View the tradeoff between a priority metric and its feasibility

18 Sectors (All) ▼

Name	Industry complexity	
Search by name Reset selection		
Other Financial Investment Activities	11.261	+
Scientific Research and Development Services	9.679	+
Securities and Commodity Contracts Intermediation and Brokerage	7.827	+
Educational Support Services	5.961	+
Nonscheduled Air Transportation	4.905	+
Pharmaceutical and Medicine Manufacturing	3.402	+
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	3.040	+



< Y-axis priority metric:

- Industry complexity
- Strategic gain
- Good jobs
- Good jobs w/o BA

< Filter by:

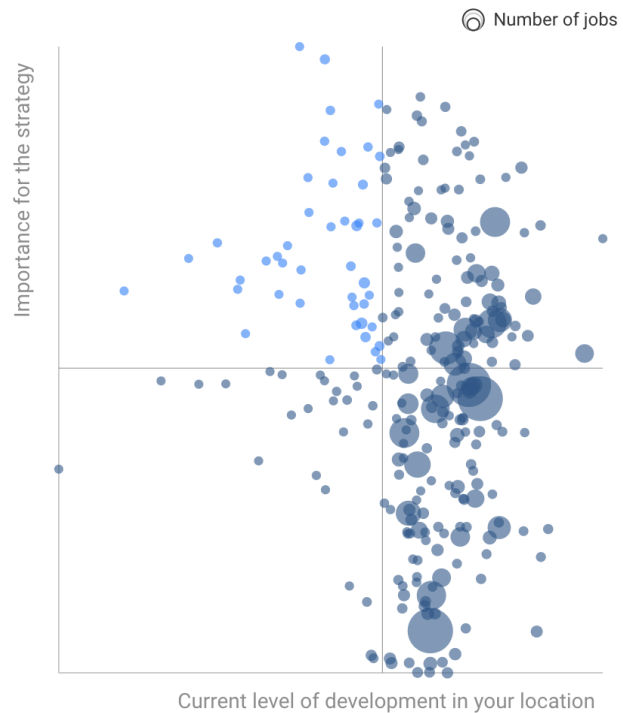
Low local presence ×

High share of good jobs ×

Tradable industries ×

3 Click **+** in the table or a bubble in the scatterplot to add an industry to your growth strategy

1 Explore the occupations in the scatterplot



The most important occupations for your strategy are in the top half of the plot.

The least developed occupations in your location are on the left side of the plot.

The top left quadrant highlights occupations that are both important and underdeveloped.

2 Use the table to learn more about each occupation

[Scroll to strategy](#)

Occupation [⚙] Sorted from most to least important for the strategy	Local median wage [⚙] Range \$0-99	Current jobs [⚙] Range 0-66705	Additional jobs required [⚙] For strategy	Growth forecast [⚙] In 10 years
Timing Device Assemblers and Adjusters	\$18	9	19	-0.1
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	\$18	2,018	3043	229.5
Aerospace Engineers	\$50	945	96	121.3
Life Scientists, All Other	\$43	77	44	8.6
Mixing and Blending Machine Setters, Operators, and Tenders	\$19	2,239	0	69.0
Bioengineers and Biomedical Engineers	\$45	205	97	9.3
...

View occupations that: Require a BA degree
 Do not require a BA degree

[Share strategy](#)
[Back to preview mode](#)

www.brookings.edu/interactives/wof-mobility-pathways/

Mobility pathways

This tool visualizes data on real job-to-job transitions to show how workers can advance through labor markets. Select an occupation to get started or see below to learn how the tool works.

Architecture and Engineerin ✕

Select an occupation ^

All sectors v

- Aerospace Engineers
- Architects, Except Naval
- Biomedical and agricultural engineers
- Chemical Engineers

How To Use The
Mobility Pathways Tool



National level: Top **occupation** transitions **into** out of Computer Hardware Engineers

What jobs lead to Computer Hardware Engineers ?

Jobs as Computer Hardware Engineers have a national median wage of \$117k, a mobility ranking of 0.19 (on a scale of -1 to 1), and a current demand of -1 (on a scale of -2 to 2). The chart below lists all top transitions to this job.

[Explore these occupations in your city below ↓](#)

Origin occupations for selected job
The diagram below visualizes job transitions, where the branch width represents the share of transitions into the selected occupation made from each origin occupation.



Current demand (national) i	Occupation (% of total transitions) i	Median wage (national) i	Mobility Index i
Range: -2 +2	Range: 0% 100%	Range: 40k \$ 117k \$	Range: -1 +1
▼ -1	Computer Software Engineers 	\$ 105K 	+0.05
▬ 0	Computer Scientists and Systems Analyst 	\$ 78K 	+0.07
▼ -1	Computer Hardware Engineers 	\$ 117K 	+0.19
	Miscellaneous engineers including nuclear engineers 	\$ 100K 	+0.08

Taking these ideas further

- Using career trajectory info from job profiles and resumes
- Tell me your current situation and demographics, get back next career steps to maximize X
 - Where X is lifetime earnings, job satisfaction, career stability, etc
- A key concern: Data are backward looking and may entrench and perpetuate existing inequities

Thank you!

- Brookings **Workforce of the Future initiative**
 - Greg Wright: gwright@brookings.edu

Does Economic Development Planning Matter?

