

## Employment [beginning-of-quarter]

**Datafile label:** Emp

**QWI indicator:** Worker employment

**Level of measurement:** Job (PIK-SEIN pair)

**Level of estimation:** A worker's job

**Employment status:** Point-in-time

**Definition:** Individual (i) who was employed at firm (j) in the reference (t) quarter and the previous (t-1) quarter.

**Explanation:**

- The total number of workers who were employed by a given employer on the first calendar day of the reference quarter.
- Count of workers employed by a given employer (at the beginning of the reference quarter).
- Represents an employment status in the reference quarter.
- Employment [beginning-of-quarter] (Emp) defines a category of workers.

**Measure:**

$$b_{(ijt)} = \begin{cases} 1, & \text{if } m_{(ijt-1)} = 1 \text{ \& } m_{(ijt)} = 1 \\ 0, & \text{otherwise} \end{cases}$$

$$m_{(ijt)} = \begin{cases} 1, & \text{if individual } i \text{ has positive earnings at} \\ & \text{establishment } j \text{ during year/quarter } t \\ 0, & \text{otherwise} \end{cases}$$

(See above Definition and Explanation sections for a narrative description.)

**QWI availability:** Not defined for the first quarter of available data from a given state.

**Employment [*beginning-of-quarter*] (Emp) Example:**

The State of New Columbia contains three firms, Happy Teeth, Quick Lunch, and Daily Tribune. For the purpose of estimating Employment [*beginning-of-quarter*] (Emp), the reference quarter is 1996:Q3.

History of UI Wage Reports for HAPPY TEETH				Emp
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Almez	\$ -	\$ 6,000	\$ 5,750	
Suresh	\$ 8,500	\$ 8,500	\$ 8,750	1
Tom	\$ 4,000	\$ 4,250	\$ -	1
Iona	\$ -	\$ 5,000	\$ 5,000	
Dr. Ali	\$12,750	\$13,000	\$13,250	1
Total for employees who fit the definition of Emp in the reference (1996:Q3) quarter:				3

At Happy Teeth, Suresh, Tom and Dr. Ali were employed in the reference (1996:Q3) quarter and previous (1996:Q2) quarter. The firm had an Emp of 3 jobs.

History of UI Wage Reports for QUICK LUNCH				Emp
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Ly	\$ -	\$ 6,000	\$ 5,750	
Ms. White	\$ -	\$ 8,500	\$ 8,750	
Total for employees who fit the definition of Emp in the reference (1996:Q3) quarter:				0

At Quick Lunch, no one was employed in the previous (1996:Q2) quarter because the firm opened in the reference (1996:Q3) quarter. The firm had an Emp of 0 jobs.

History of UI Wage Reports for DAILY TRIBUNE				Emp
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Chaitley	\$ 6,003	\$ 6,000	\$ -	1
Khone	\$ 8,500	\$ 8,500	\$ -	1
Mr. Ramirez	\$ 4,000	\$ 4,025	\$ -	1
Total for employees who fit the definition of Emp in the reference (1996:Q3) quarter:				3

At Daily Tribune, Chaitley, Khone, and Mr. Ramirez were employed in the reference (1996:Q3) quarter and previous (1996:Q2) quarter. The firm had an Emp of 3 jobs.

Both Happy Teeth and Daily Tribune had employees who were employed in the reference (1996:Q3) quarter and previous (1996:Q2) quarter, fitting the definition of Emp. So their Emp is summed. Employment [*beginning-of-quarter*] (Emp) for the State of New Columbia in the reference (1996:Q3) quarter is 6 jobs.

Totals for the STATE OF NEW COLUMBIA		Emp
		1996:Q3
Happy Teeth		3
Daily Tribune		3
Total:		6

## Employment End-of-Quarter

**Datafile label:** EmpEnd

**QWI indicator:** Worker employment

**Level of measurement:** Job (PIK-SEIN pair)

**Level of estimation:** A worker's job

**Employment status:** Point-in-time

**Definition:** Individual (i) who was employed at firm (j) in the reference (t) quarter and the subsequent (t+1) quarter.

**Explanation:**

- The total number of workers who were employed by a given employer on the last calendar day of the reference quarter.
- Count of workers employed by a given employer (at the end of the reference quarter).
- Represents an employment status in the reference quarter.
- Employment End-of-Quarter (EmpEnd) defines a category of workers.

**Measure:**

$$e_{(ijt)} = \begin{cases} 1, & \text{if } m_{(ijt)} = 1 \text{ \& } m_{(ijt+1)} = 1 \\ 0, & \text{otherwise} \end{cases}$$

$$m_{(ijt)} = \begin{cases} 1, & \text{if individual } i \text{ has positive earnings at} \\ & \text{establishment } j \text{ during year/quarter } t \\ 0, & \text{otherwise} \end{cases}$$

(See above Definition and Explanation sections for a narrative description.)

**QWI availability:** Not defined for the first or final quarters of available data from a given state.

**Employment End-of-Quarter (EmpEnd) Example:**

The State of New Columbia contains three firms, Happy Teeth, Quick Lunch, and Daily Tribune. For the purpose of estimating Employment End-of-Quarter (EmpEnd), the reference quarter is 1996:Q3.

History of UI Wage Reports for HAPPY TEETH				EmpEnd
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Almez	\$ -	\$ 6,000	\$ 5,750	1
Suresh	\$ 8,500	\$ 8,500	\$ 8,750	1
Tom	\$ 4,000	\$ 4,250	\$ -	
Iona	\$ -	\$ 5,000	\$ 5,000	1
Dr. Ali	\$12,750	\$13,000	\$13,250	1
Total for employees who fit the definition of EmpEnd in the reference (1996:Q3) quarter:				4

At Happy Teeth, Almez, Suresh, Iona, and Dr. Ali were employed in the reference (1996:Q3) quarter and subsequent (1996:Q4) quarter. The firm had an EmpEnd of 4 jobs.

History of UI Wage Reports for QUICK LUNCH				EmpEnd
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Ly	\$ -	\$ 6,000	\$ 5,750	1
Ms. White	\$ -	\$ 8,500	\$ 8,750	1
Total for employees who fit the definition of EmpEnd in the reference (1996:Q3) quarter:				2

At Quick Lunch, Ly and Ms. White were employed in the reference (1996:Q3) quarter and subsequent (1996:Q4) quarter. The firm had an EmpEnd of 2 jobs.

History of UI Wage Reports for DAILY TRIBUNE				EmpEnd
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Chaitley	\$ 6,003	\$ 6,000	\$ -	
Khone	\$ 8,500	\$ 8,500	\$ -	
Mr. Ramirez	\$ 4,000	\$ 4,025	\$ -	
Total for employees who fit the definition of EmpEnd in the reference (1996:Q3) quarter:				0

At Daily Tribune, no one was employed in the subsequent (1996:Q4) quarter because the firm closed in the reference (1996:Q3) quarter. The firm had an EmpEnd of 0 jobs.

Both Happy Teeth and Quick Lunch had employees who were employed in the reference (1996:Q3) quarter and subsequent (1996:Q4) quarter, fitting the definition of EmpEnd. So their EmpEnd is summed. Employment End-of-Quarter (EmpEnd) for the State of New Columbia in the reference (1996:Q3) quarter is 6 jobs.

Totals for the STATE OF NEW COLUMBIA		EmpEnd
		1996:Q3
Happy Teeth		4
Quick Lunch		2
Total:		6

## Employment Stable Jobs

**Datafile label:** EmpS

**QWI indicator:** Worker employment

**Level of measurement:** Job (PIK-SEIN pair)

**Level of estimation:** A worker's job

**Employment status:** Full quarter

**Definition:** Individual (i) who was employed at firm (j) in the reference (t) quarter, the previous (t-1) quarter, and the subsequent (t+1) quarter.

**Explanation:**

- Total number of workers employed by a given employer for three consecutive quarters.
- Count of workers employed in stable jobs.
- Represents a change to full-quarter status during the reference quarter.
- Employment Stable Jobs (EmpS) defines a category of workers.

**Measure:**

$$f_{(ijt)} = \begin{cases} 1, & \text{if } m_{(ijt-1)} = 1 \text{ \& } m_{(ijt)} = 1 \text{ \& } m_{(ijt+1)} = 1 \\ 0, & \text{otherwise} \end{cases}$$

$$m_{(ijt)} = \begin{cases} 1, & \text{if individual } i \text{ has positive earnings at} \\ & \text{establishment } j \text{ during year/quarter } t \\ 0, & \text{otherwise} \end{cases}$$

(See above Definition and Explanation sections for a narrative description.)

**QWI availability:** Not defined for the first or final quarters of available data from a given state.

**Employment Stable Jobs (EmpS) Example:**

The State of New Columbia contains three firms, Happy Teeth, Quick Lunch, and Daily Tribune. For the purpose of estimating Employment Stable Jobs (EmpS), the reference quarter is 1996:Q3.

History of UI Wage Reports for HAPPY TEETH				EmpS
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Almez	\$ -	\$ 6,000	\$ 5,750	
Suresh	\$ 8,500	\$ 8,500	\$ 8,750	1
Tom	\$ 4,000	\$ 4,250	\$ -	
Iona	\$ -	\$ 5,000	\$ 5,000	
Dr. Ali	\$12,750	\$13,000	\$13,250	1
Total for employees who fit the definition of EmpS in the reference (1996:Q3) quarter:				2

At Happy Teeth, Suresh and Dr. Ali were employed in the reference (1996:Q3), subsequent (1996:Q4) and previous (1996:Q2) quarters. The firm had an EmpS of 2 jobs.

History of UI Wage Reports for QUICK LUNCH				EmpS
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Ly	\$ -	\$ 6,000	\$ 5,750	
Ms. White	\$ -	\$ 8,500	\$ 8,750	
Total for employees who fit the definition of EmpS in the reference (1996:Q3) quarter:				0

At Quick Lunch, no one was employed in the previous (1996:Q2) quarter because the firm opened in the reference (1996:Q3) quarter. The firm had an EmpS of 0 jobs.

History of UI Wage Reports for DAILY TRIBUNE				EmpS
Employees	1996:Q2	1996:Q3	1996:Q4	1996:Q3
Chaitley	\$ 6,003	\$ 6,000	\$ -	
Khone	\$ 8,500	\$ 8,500	\$ -	
Mr. Ramirez	\$ 4,000	\$ 4,025	\$ -	
Total for employees who fit the definition of EmpS in the reference (1996:Q3) quarter:				0

At Daily Tribune, no one was employed in the subsequent (1996:Q4) quarter because the firm closed in the reference (1996:Q3) quarter. The firm had an EmpS of 0 jobs.

Only Happy Teeth had employees who were employed in the reference (1996:Q3) quarter, the subsequent (1996:Q4) quarter, and the previous (1996:Q2) quarter, fitting the definition of EmpS. So its EmpS is summed. Employees Stable Jobs (EmpS) for the State of New Columbia in the reference (1996:Q3) quarter is 2 jobs.

Totals for the STATE OF NEW COLUMBIA	EmpS
	1996:Q3
Happy Teeth	2
Total:	2

## QWI Definitions at a Glance

<u>Lead/Lag Notation</u>	<u>Date</u>	<u>Emp</u>	<u>EmpEnd</u>	<u>EmpS</u>
t-6	1995:Q1			
t-5	1995:Q2			
t-4	1995:Q3			
t-3	1995:Q4			
t-2	1996:Q1			
t-1	1996:Q2	1		1
<b>t (reference)</b>	<b>1996:Q3</b>	<b>1</b>	<b>1</b>	<b>1</b>
t+1	1996:Q4		1	1
t+2	1997:Q1			
t+3	1997:Q2			
t+4	1997:Q3			
t+5	1997:Q4			

t(reference)= the year/quarter for which the QWI estimate is calculated

1= PIK-SEIN pairing observed in the reference quarter is present in the designated quarter.

0= PIK-SEIN pairing observed in the reference quarter is not present in the designated quarter.

### QWI

Emp	Employment [beginning-of-quarter]	Individual (i) who was employed at firm (j) in the reference (t) quarter and the previous (t-1) quarter.
EmpEnd	Employment End-of-Quarter	Individual (i) who was employed at firm (j) in the reference (t) quarter and the subsequent (t+1) quarter.
EmpS	Employment Stable Jobs	Individual (i) who was employed at firm (j) in the reference (t) quarter, the previous (t-1) quarter, and the subsequent (t+1) quarter.

## QWI Availability at a Glance

<u>State Input Data</u>	<u>Date</u>	<u>Emp</u>	<u>EmpEnd</u>	<u>EmpS</u>
first quarter	1990:Q1	X	X	X
	1990:Q2			
	1990:Q3			
	1990:Q4			
	1991:Q1			
	1991:Q2			
	1991:Q3			
	1991:Q4			
	:::			
	:::			
	:::			
	:::			
	2002:Q1			
	2002:Q2			
	2002:Q3			
	2002:Q4			
	2003:Q1			
	2003:Q2			
	2003:Q3			
last quarter	2003:Q4		X	X

State Input Data- State ES202 and UI Wage Records

X- QWI estimate is not calculated