

Workforce Dynamics in Middle Tennessee Marketing Region

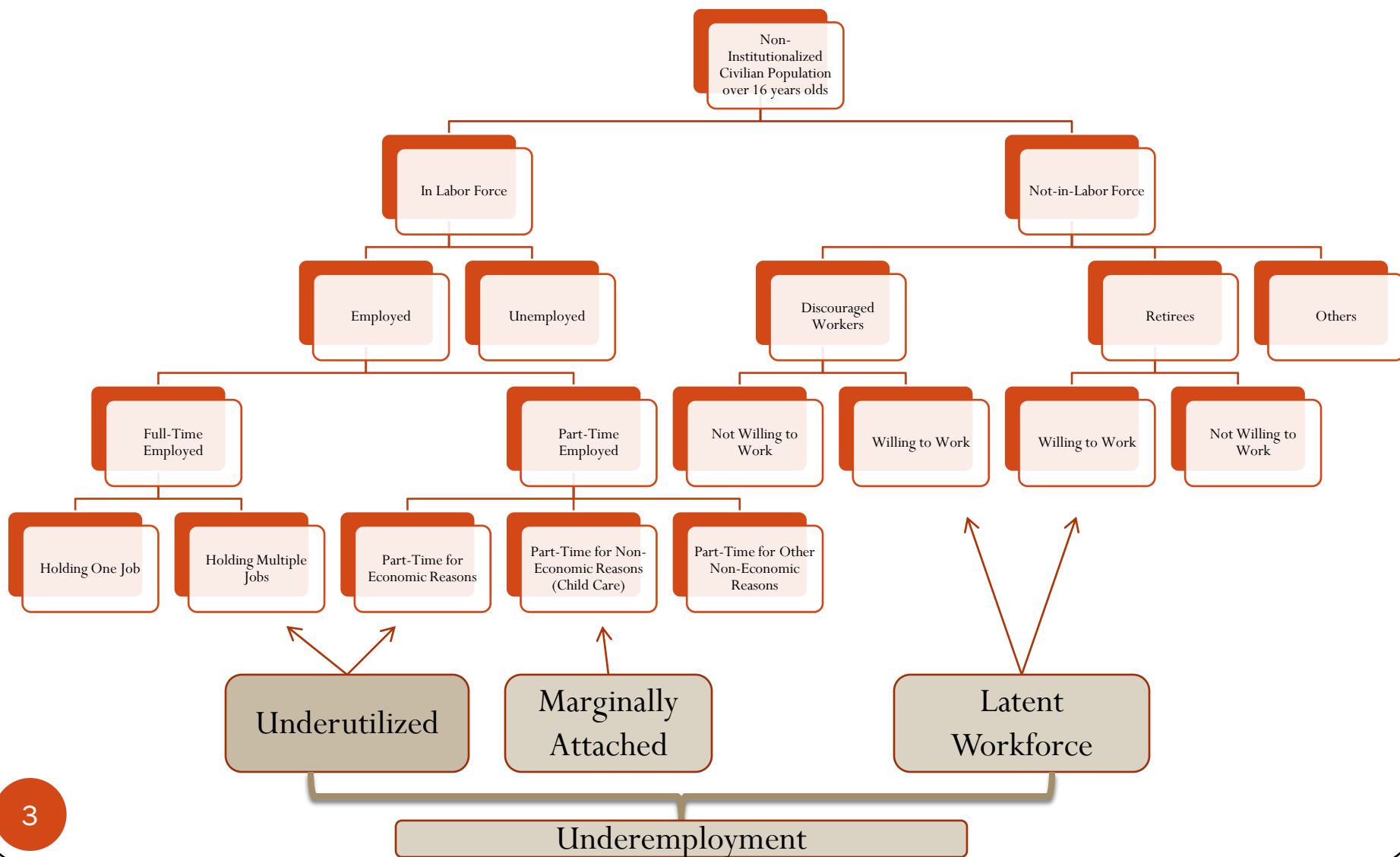
Murat Arik, Ph.D.
Associate Director

Business and Economic Research Center
Jennings A. Jones College of Business
Middle Tennessee State University
P.O. Box 102
Murfreesboro, TN 37132

Section I: Overview

- A necessary component of a target industry analysis is to estimate available workforce in the region.
- Official unemployment rates do not often represent the actual workforce dynamics.
- The survey-based research in neighboring states (Kentucky and Alabama) shows that there are substantial number of workers who are currently employed but “underutilized” due to economic reasons, skill-mismatch and others.
 - According to these studies, “underemployment” is often between 15 and 40 percent of workforce in Alabama and Kentucky counties.
- In addition to “underemployment,” there are also discouraged workers and retirees who are willing to work.
- In the absence of the survey data, this study imputes underemployment in the study area from the state level determinants of underemployment.

Section II: Concept of Underemployment



Section III: Methodology

- State level “underemployment rates” are estimated from Current Population Survey (October 2007) for 50 states and District of Columbia.
- BERC collected a set of socioeconomic indicators for each states that may be used as determinants of underemployment.
 - BERC used the survey-based studies conducted in the U.S. to identify the characteristics of underemployed.
 - At the state level, BERC then used a subset of available data that may be considered proxies to the individual level characteristics.
- BERC used OLS regression analysis to identify the determinants of state level underemployment rates.
- BERC then used the coefficients from this regression analysis to impute county-level underemployment estimates in the study area. Data used in this analysis is presented in the appendix.
- The results obtained through this method provide a conservative estimates of the underemployment in the region.
- A comprehensive survey is necessary to understand the extent of underemployment in the region

Section IV: Findings

- Findings suggest that “underemployment” rate in the region is nearly 10 percent.
 - This is in addition to 6.47 percent unemployment rate in the region. A word of caution: these two figures should not be added together as they are completely different constructs.
- As of 2006, there were 13,634 unemployed workforce seeking jobs in the region.
- With additional 20,575 underemployed individuals, total available labor pool increases to 34,209 people.
- The following tables present the issue from different perspectives.

Section IV: Findings (Continued): Available Labor Pool

Available Labor Pool in Southern Middle Tennessee Counties: Employment, Unemployment, and Underemployment**

Counties	Labor Force	Employed	Unemployed	Underemployed	Unemployment Rate	Underemployment Rate
Bedford	22,114	20,970	1,144	2,099	5.2	9.49
Coffee	25,478	24,086	1,392	3,349	5.5	13.15
Franklin	20,087	18,942	1,145	1,088	5.7	5.42
Giles	13,471	12,513	958	1,303	7.1	9.67
Hickman	10,415	9,860	555	0	5.3	0.00
Lawrence	16,899	14,990	1,909	902	11.3	5.34
Lewis	5,244	4,869	375	178	7.2	3.40
Lincoln	17,047	16,331	716	1,346	4.2	7.90
Marshall	12,649	11,854	795	1,729	6.3	13.67
Maury	36,422	34,451	1,971	5,920	5.4	16.25
Moore	3,125	2,978	147	20	4.7	0.64
Perry	3,350	3,131	219	86	6.5	2.58
Warren	18,031	16,405	1,626	1,955	9	10.84
Wayne	6,539	5,857	682	599	10.4	9.16
Southern Middle Tennessee	210,871	197,237	13,634	20,575	6.47	9.76

BERC and Current Population Survey (October 2007)

**Imputed from state level indicators using OLS regression analysis (see appendix for technical details).

Section IV: Findings (Continued): Components of Underemployment Used in This Study

Components of "Underemployment"* Estimated from Averages of States Using Current Population Survey (October 2007)

Counties	Components of Underemployment					Latent Workforce**	Total "Underemployment"
	FT but part-time for economic reasons	PT and usually PT for economic reasons	Not at work, Usually Part-Time	FT holding multiple jobs	Marginally attached-childcare problems	Discouraged worker and retired -not in the labor force but interested in working	
Bedford	166	305	167	899	73	490	2,099
Coffee	265	486	266	1,434	117	781	3,349
Franklin	86	158	86	466	38	254	1,088
Giles	103	189	104	558	45	304	1,303
Hickman	0	0	0	0	0	0	0
Lawrence	71	131	72	386	31	210	902
Lewis	14	26	14	76	6	42	178
Lincoln	107	195	107	577	47	314	1,346
Marshall	137	251	137	740	60	403	1,729
Maury	469	859	470	2,535	206	1,381	5,920
Moore	2	3	2	9	1	5	20
Perry	7	13	7	37	3	20	86
Warren	155	284	155	837	68	456	1,955
Wayne	47	87	48	256	21	140	599
Southern Middle Tennessee	1,629	2,985	1,635	8,811	717	4,799	20,575

BERC and Current Population Survey (October 2007).

*Underemployment reported here includes five (5) different labor force-related constructs: (1) Part of the civilian labor force but employed part-time for economic reasons (underutilized), (2) part of the civilian labor force but employed part-time due to child care needs (marginally attached), (3) part of the civilian labor force and employed full-time but holds multiple jobs, (4) not in the civilian labor force and not looking for job but interested in working (discouraged workers/latent workforce), and (5) not in the civilian labor force due to retirement but interested in working (latent workforce).

**Concept of latent workforce refers to those individuals who are not in the civilian labor force due to discouragement, retirement, disability, and other reasons but indicated that they consider working full-time or part-time.

Section IV: Findings (Continued): Revised Labor Force Estimates Based on the Findings

Revised Labor Force Data: Total Available Labor Pool

Counties	Labor Force	Latent Workforce*	Revised Labor Force	Employed But Unemployed	Employed But Underutilized	Not in Labor Force But Interested in Working	Available Labor Pool	Percent of Revised Labor Force**
Bedford	22,114	490	22,604	1,144	1,610	490	3,243	14.35
Coffee	25,478	781	26,259	1,392	2,568	781	4,741	18.06
Franklin	20,087	254	20,341	1,145	834	254	2,233	10.98
Giles	13,471	304	13,775	958	999	304	2,261	16.41
Hickman	10,415	0	10,415	555	0	0	555	5.33
Lawrence	16,899	210	17,109	1,909	692	210	2,811	16.43
Lewis	5,244	42	5,286	375	137	42	553	10.47
Lincoln	17,047	314	17,361	716	1,032	314	2,062	11.88
Marshall	12,649	403	13,052	795	1,326	403	2,524	19.34
Maury	36,422	1,381	37,803	1,971	4,539	1,381	7,891	20.87
Moore	3,125	5	3,130	147	15	5	167	5.34
Perry	3,350	20	3,370	219	66	20	305	9.06
Warren	18,031	456	18,487	1,626	1,499	456	3,581	19.37
Wayne	6,539	140	6,679	682	459	140	1,281	19.18
Southern Middle Tennessee	210,871	4,799	215,670	13,634	15,776	4,799	34,209	15.86

*Latent labor force includes those individuals who are not in the civilian labor force but interested in working part-time or full-time.

**Available labor pool as percent of revised labor force is imputed from the state level OLS regression. Survey data in neighboring states (Alabama and Kentucky) suggests that these percentages represent the minimum rate of available labor pool.

Including “latent workforce” as defined here increases the labor force from 210,871 to 215,670

Section V: Appendix

Appendix A: State Level Determinants of Underemployment: Regression Results

Dependent Variable: Underemployment Rate (%) (October 2007)

Variables	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	-8.508	69.042	-0.120	0.903
Population ages 15-24 (%)	0.548	0.640	0.860	0.398
Population ages 25-44 (%)	0.579	0.397	1.460	0.154
Population ages 45-64 (%)	0.138	0.408	0.340	0.737
Whites (%)	-0.011	0.049	-0.230	0.823
Blacks (%)	-0.023	0.077	-0.300	0.769
Hispanics (%)	-0.011	0.066	-0.170	0.869
Female (%)	-0.800	1.139	-0.700	0.487
Farm, Agricultural, and Mining (Employment, %)	0.296	0.302	0.980	0.335
Construction (Employment, %)	-0.150	0.656	-0.230	0.821
Manufacturing (Employment, %)	0.309	0.152	2.030	0.051
TCPU (Employment, %)*	0.318	0.429	0.740	0.465
Wholesale (Employment, %)	-0.408	0.561	-0.730	0.473
FIRE (Employment, %)**	-0.373	0.255	-1.460	0.154
Retail (Employment, %)	1.213	0.482	2.510	0.017
Unemployment Rate (%)	-0.586	0.374	-1.570	0.127
Households Income Under \$20K (%)	0.211	0.179	1.180	0.248
Wage (Average)	0.000	0.000	2.880	0.007
HSNHS/COL*** (Ratio)	-0.490	0.844	-0.580	0.566

R-Square: 0.471

Data Source: Underemployment Rate is calculated from Current Population Survey for 50 States and District of Columbia. All Other Variables are from Census, BLS, BEA, and Woods and Poole 2007.

*Transportation, Communications and Public Utilities.

**Finance, Insurance and Real Estate

***Ratio of percent of people over 25 with high school and less than high school education over percent of people with some college and above education.

Section V: Appendix

Appendix B: County Socioeconomic Indicators Used for Calculating Underemployment Rate (2006)

County Indicators	Bedford	Coffee	Franklin	Giles	Hickman	Lawrence	Lewis	Lincoln	Marshall	Maury	Moore	Perry	Warren	Wayne
Population ages 15-24 (%)	13.03	12.51	15.01	13.47	12.59	13.10	12.85	12.77	12.85	13.23	12.92	13.12	12.06	12.77
Population ages 25-44 (%)	31.22	27.70	25.82	25.97	30.76	27.21	26.83	26.68	29.00	28.59	27.22	24.74	29.30	32.24
Population ages 45-64 (%)	23.56	25.45	26.72	27.73	25.44	24.52	26.80	26.87	26.98	26.71	28.14	27.61	25.39	25.73
Whites (%)	78.51	91.69	91.45	86.67	93.59	96.48	96.51	90.01	88.33	81.40	95.50	95.78	89.02	91.34
Blacks (%)	7.89	3.65	5.62	11.44	4.43	1.59	1.74	7.07	7.53	13.24	3.44	2.86	3.18	7.23
Hispanics (%)	12.21	3.43	2.05	1.06	1.33	1.31	1.24	1.85	3.72	4.44	0.74	1.16	6.96	0.91
Female (%)	49.95	51.27	51.11	51.16	47.04	51.35	50.53	51.23	50.59	50.93	49.65	50.33	50.20	44.47
Farm, Agricultural, and Mining (Employment, %)	8.10	5.00	10.00	14.00	13.00	11.00	8.00	15.00	10.00	5.00	20.00	8.00	15.00	15.00
Construction (Employment, %)	7.06	5.94	7.10	5.30	12.76	5.86	8.33	5.94	4.61	4.58	3.13	4.71	4.22	3.04
Manufacturing (Employment, %)	27.07	17.16	12.38	20.77	10.58	17.44	11.49	19.69	36.32	18.01	12.61	36.13	29.11	17.39
TCPU (Employment, %)*	3.48	2.31	3.08	3.01	3.80	4.56	4.65	2.20	5.04	4.11	1.89	2.83	3.89	2.07
Wholesale (Employment, %)	2.15	2.93	2.27	2.71	2.23	4.91	3.56	3.20	1.16	2.62	1.74	1.28	4.39	1.57
FIRE (Employment, %)**	5.42	4.63	5.60	5.18	5.55	4.61	6.64	4.19	4.73	6.17	13.08	4.29	3.74	3.91
Unemployment Rate (%)	5.30	5.55	5.80	7.26	5.47	11.77	7.31	4.23	6.46	5.58	4.74	6.66	9.42	10.92
Households Income Under \$20K (%)	21.69	25.00	24.00	24.00	27.00	27.00	27.00	26.00	23.00	20.00	20.00	30.00	31.00	32.00
HSNHS/COL*** (Ratio)	7.99	4.72	5.52	8.48	14.01	10.52	10.81	7.40	8.40	6.34	7.47	13.04	9.95	11.44
Retail (Employment, %)	11.75	18.41	14.96	16.43	9.71	18.07	17.66	14.27	13.13	15.85	9.81	8.75	13.00	11.96
Wage (Average)	\$23,531	\$25,041	\$17,904	\$21,110	\$15,254	\$18,664	\$15,943	\$17,759	\$22,688	\$38,413	\$19,888	\$19,196	\$23,233	\$17,315
Underemployment Rate (%)****	9.49	13.15	5.42	9.67	0.00	5.34	3.40	7.90	13.67	16.25	0.64	2.58	10.84	9.16

Data Source: All Variables (Except Underemployment Rate) are from Census, BLS, BEA, and Woods and Poole 2007.

*Transportation, Communications and Public Utilities.

**Finance, Insurance and Real Estate

***Ratio of percent of people over 25 with high school and less than high school education over percent of people with some college and above education.

****Underemployment Rate is imputed from the state OLS regression coefficients in Appendix A.

Thank You!

Questions?