Labor Impacts of Recovery from Severe Mental Illnesses

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Executive Summary

- Cumulatively, nearly 2.5 million individuals diagnosed with a severe mental illness (SMI) were absent from the U.S. labor force due to disability between 2014–2020; of these, just over 1 million individuals would otherwise have been employed were it not for their disability, and their absence translates into a cumulative loss of approximately 1.9 billion work hours and $136 billion in real output.
- Assuming access to appropriate mental health treatment and a feasible rate of recovery, this study finds that 11–42 percent of these individuals could have been employed between 2014–2020; this recovery would have increased work hours by approximately 207–793 million and economic output by $15–$57 billion.
- Under this study's assumptions, if every U.S. adult with SMI were to receive mental health treatment, the number of work hours and economic output produced by their reentry to the labor market could exceed those aforementioned estimates by as much as fivefold.

Introduction

Severe mental illness (SMI)—which includes bipolar and major depressive disorders, schizophrenia, and schizoaffective disorder—is considered a leading cause of non-participation in the workforce, as the symptoms often curtail an individual's ability to complete job-related and non-routine tasks. Cumulatively, nearly 2.5 million individuals diagnosed with a SMI were absent from the U.S. labor force due to disability between 2014–2020. Of these, just over 1 million individuals would otherwise have been employed were it not for their disability, and their absence translates into a cumulative loss of approximately 1.9 billion work hours and $136 billion in economic output.

It is not realistic to assume that 100 percent of these 1 million individuals with SMI absent from the labor force between 2014–2020 could have recovered and found employment during this period. This study employs available data to estimate a feasible range of recovery for those treated for SMI and how many could return to work. Using these estimates, it calculates the number of additional work hours and economic output that could be realized if these individuals had been active in the workforce between 2014–2020. It concludes that 11–42 percent of these individuals could have recovered and worked during this period, increasing work hours by approximately 207–793 million and economic output by $15–$57 billion.

As recovery is unlikely without access to mental health treatment, this study focuses on a cohort of individuals with SMI who have access to and are pursuing state-level mental health treatment. These individuals make up approximately 18 percent of the total U.S. adult population with SMI. If the total population of individuals with SMI had the same access to treatment as the study group, the number of work hours and economic output produced by their reentry to the labor market could exceed those aforementioned estimates by as much as fivefold.

Overview of Severe Mental Illness

According to the National Institute of Mental Health, a severe mental illness is defined as "a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities."[1] Specifically, SMI refers to a subset of illnesses listed in the Diagnostic and Statistical Manual of Mental Disorders. These illnesses include bipolar disorder, major depressive disorder, schizophrenia, and schizoaffective disorder.[2]

SMIs are considered a leading cause of labor force non-participation due to the disabling nature of the symptoms.[3] As such, access to treatment and recovery is imperative for many who hope to pursue employment. Since the early 2000s, researchers have studied the potential for those with SMI to achieve recovery adequate for employment. There is no consensus on whether recovery means a "clinical" or "functional recovery." The former suggests the observation of symptomatic remission and improved functioning over a given period, while the latter, more common, suggests returning to one's former quality of life regardless of symptoms.[4]

Regardless, recovery is contingent on access to treatment. Treatment options for SMI currently include psychotherapy, medication, interventions (community treatment, supportive employment, and supportive housing), and brain stimulation therapies.[5] Not all individuals are able to access these treatment options; almost a third of all adults with any mental illness reported that they were unable to receive treatment, 42 percent of whom reported it was due to the cost.[6] Though adults with SMI are more likely to access treatment than those with less severe diagnoses, there are still many who lack the proper care needed for recovery. In 2020, 64.5 percent of U.S. adults with SMI received mental health services, leaving 35.5 percent without supervised treatment.[7]

Lack of Labor Force Participation Due to SMI

This study first estimates the total labor and economic costs of SMI-related absence from the labor market. It then applies recovery rate estimates from previous studies on the subject to quantify the number of individuals with SMI who could actively participate in the labor force and contribute to economic output if they were to receive appropriate mental health treatment.

Data and Methodology

In an ideal setting, this study would have access to data that recorded labor market, SMI, and treatment statuses for the total population of U.S. adults with SMI. Even more ideal, but still beyond the capabilities of most researchers, would be for this study to have access to data from a single source with reported estimates of labor force participation, reason for nonparticipation, unemployment, average productive work hours, economic output per worker, access to treatment, and recovery for all U.S. adults with SMI. Such data is not available. Instead, this study bases all reported labor force participation estimates off a small cohort of individuals with

SMI pursuing treatment through state-level authorities as found in the SAMHSA Mental Health Annual Reports. These come from the Department of Health and Human Services and provide all labor force estimates used in this study, including participation, nonparticipation and reason, and unemployment. [8] These data do not include individuals in other sources of treatment and those who recover without treatment, so this study relies on a conservative estimate of the impacts. The cohort used represents, on average between 2014–2020, approximately 18 percent of the total population of U.S. adults with SMI. It is assumed, because all individuals in the data set are receiving treatment, that they all have the same likelihood of recovery.

This study specifically focuses on a cohort of individuals with SMI because SMIs are more clearly defined by medical research and therefore have more accessible and reliable data. Other mental health illnesses such as anxiety, eating disorders, obsessive-compulsive disorder, and paranoia likely also have labor market impacts but are less clearly defined and have less available data because of how the illnesses present differently depending on the individual. As such, the labor market impacts estimated by this study are likely conservative.

The study supplements this data with work-hour and productivity statistics from the Bureau of Labor Statistics' (BLS) multifactor productivity program and the Organization for Economic Co-Operation and Development (OECD) Data Explorer.[9][10] It then applies to the data a range of recovery rate estimates compiled from previous studies. The studies, Hegarty et al., Menezes et al., Warner, J??skel?inen, Asbo et al., and Salzer et al. (see Appendix), varied in their methodologies through their choice of controls and recovery criteria. While all of the studies focused on SMI, some were more specific, focusing on only one illness. As recovery from SMI is difficult to quantify, this study considers the six previous studies' findings holistically to produce a range of reasonable patient recovery rates. The range used in this study holds that over the period from 2014–2020, 11–42 percent of individuals diagnosed with at least one severe mental illness and pursuing treatment were capable of recovery to the point of employment. By using a range, rather than a specific rate, this study acknowledges the limitations of previous research and attempts to present reliable lower- and upper-bound estimates.

For calculations using data reports of absence from the labor force, this study uses the estimates of those who reported being absent from the labor force due to disability. By using these estimates, this study limits the inclusion of individuals with SMI who are absent from the labor force for reasons other than their mental health, such as caretaking responsibilities and pursuing education. This approach is likely to result in conservative estimates throughout the study, as it is possible that individuals with SMI do not have the capacity to easily report their disability, or that those absent for different reasons may consider their illness a secondary factor.

To determine the corresponding missing work hours and economic contribution, the study estimates for each year the number of these individuals who would have been active employees if they were in the labor force. To that end, the study estimates each year's unemployment rate for individuals with SMI. Using the unemployment and labor force participation data provided by the SAMHSA reports, this study was able to estimate the unemployment rates shown in Table 1.

Table 1: SMI Unemployment Rate, 2014–2020[11]

Year	Unemployment Rate
2014	63.7%
2015	61.1%
2016	57.0%

Year	Percentage
2017	58.8%
2018	56.7%
2019	55.8%
2020	57.2%

Using historical annual data from BLS's multifactor productivity program, this study then multiplies the average number of hours worked per employed person by the number of individuals who would be employed if not for their SMI. To find the total amount of absent economic output, the study then multiplies the average labor productivity (average output per hour worked) by the total hours missing.

Next, to determine how many individuals with SMI could join the labor force following recovery, this study uses recovery rate estimates from previous studies to estimate a range. The study applies the lower and upper bounds of the range to the number of individuals with SMI that were absent from the labor force each year. The same methodology is then used to determine the number of individuals who could have been employed and the corresponding number of work hours and amount of real output the market would gain. For the sake of consistency, this study assumes that recovery occurs at the beginning of the timeframe and therefore all cumulative estimates of additional or returned workers includes all reported years (2014–2020). This is likely an optimistic estimate as the duration of recovery is unique to each individual. This study does not consider presenteeism (lost productivity that occurs when employees are not fully functional in the workplace) due to illness, injury, or other condition.[12] All estimates assume that individuals joining the labor force as employed workers operate at the same level of hourly productivity as the rest of the reported workforce. As such, estimates may slightly overstate additional work hours, but the use of an upper- and lower-bound estimate strives to minimize this limitation.

Labor Force Statistics for Individuals with SMI

Table 2 shows the breakdown of individuals with SMI by employment status from 2014–2020. The reported individuals are adults (18 years and older) from the SAMHSA data cohort.[13]

Table 2: Individuals with SMI Absent from the Labor Force, 2014–2020[14]

Year	Individuals with SMI	In the Labor Force	Unemployed	Absent from Labor Force	Absent from Labor Force Due to Disability
2014	2,468,369	664,088	422,918	769,805	326,169
2015	2,291,052	668,081	408,042	720,958	281,112
2016	2,159,785	562,218	320,441	635,227	320,435
2017	2,593,485	729,900	429,075	746,778	391,109
2018	2,884,305	832,371	471,963	831,515	433,564
2019	2,989,664	838,458	467,777	859,312	378,292
2020	3,106,523	932,612	533,690	748,451	360,455
Average	2,641,883	746,818	436,272	758,864	355,877
Cumulative	18,493,183	5,227,728	6,107,812	5,312,046	2,491,136

On average between 2014–2020, approximately 759,000 individuals with SMI were absent from the labor force annually. This estimate is higher than the average number of individuals in this demographic who participated in the labor force, suggesting that SMI contributes to a significant absence of individuals from the labor force. Of the approximately 759,000 absent individuals, an average of 355,877 report not participating in the labor force due to disability. Of the approximately 747,000 individuals with SMI that remain in the labor force, most tend to be unemployed.

Missing Work Hours

Obviously, absent workers translate to missing work hours. Table 3 contains annual and cumulative estimates of the number of productive work hours that the labor force missed out on due to individuals with SMI who might have been employed if they were not absent from the labor force.

Table 3: Missing Work Hours Due to the Absence of Individuals with SMI from the Labor Force, 2014–2020

Year	Average Work Hours by Employed Person[15]	Individuals That Would Be Employed if in the Labor Force	Missing Hours (in millions)
2014	1830.0	118,399	216.7
2015	1831.0	109,353	200.2
2016	1823.0	137,787	251.2
2017	1821.0	161,136	293.4
2018	1827.0	187,733	343.0
2019	1824.0	167,205	305.0
2020	1800.0	154,275	277.7
Cumulative	N/A	1,035,888	1,887.2

These estimates were calculated by multiplying the average number of annual work hours per employee by the number of individuals with SMI who were absent from the labor force due to a disability but would likely be employed if they participated in the labor force. In 2020, the economy missed out on approximately 278 million work hours because of SMI-related non-participation. Cumulatively, from 2014–2020, the economy missed out on just under 1.9 billion work hours.

Missing Real Economic Output

The missing work hours correlate to a significant absence of economic output. Table 4 reports annual and cumulative estimates of real output that the economy lost due to non-participation caused by SMI.

Table 4: Missing Real Economic Output Due to the Absence of Individuals with SMI from the Labor Force, 2014–2020

Year	Labor Productivity	Missing Output (billions)
2014	$67.11	$14.5
2105	$68.10	$13.6

2106	$68.87	$17.3
2107	$70.87	$20.8
2018	$73.54	$25.2
2019	$76.10	$23.2
2020	$78.32	$21.7
Cumulative	N/A	$136.3

The lack of labor force participation from this demographic prevents the United States from maximizing its output potential. Cumulatively, from 2014–2020, the economy missed out on just over $136 billion in real economic output which translates to just over $406 per U.S. resident.

Potential Return to the Labor Force

As referenced earlier, this study assumes access to treatment for severe mental illnesses can result in recovery rates ranging from 11–42 percent of individuals. Table 5 reports estimates of the number of individuals with SMI who could have participated in the labor force between 2014–2020 if they achieved recovery.

Table 5: Individuals with Potential for Labor Force Participation, 2014–2020

Year	Lower Bound (11% recovery)	Upper Bound (42% recovery)
2014	35,879	136,991
2015	30,922	118,067
2016	35,248	134,583
2017	43,022	164,266
2018	47,692	182,097
2019	41,612	158,883
2020	39,650	151,391
Cumulative	274,025	1,046,277

In 2020, the economy could have had between 39,650–151,391 additional labor force participants if all the individuals absent due to disability recovered. Cumulatively, from 2014–2020 the labor force could have benefitted from approximately 274,000–1,000,000 additional labor force participants.

Additional Work Hours

Table 6 contains annual and cumulative estimates of the number of productive work hours the labor force could have gained from recovered individuals.

Table 6: Additional Work Hours if Recovered Individuals Gained Employment, 2014–2020

Year	Average Work Hours by Employed Person	Employed Recovered Individuals	Additional Hours (in millions)

Lower Bound (11%)	Upper Bound (42%)	Lower Bound (11%)	Upper Bound (42%)		
2014	1691.0	13,024	49,728	23.8	91.0
2015	1690.0	12,029	45,928	22.0	84.1
2016	1684.2	15,157	57,871	27.6	105.5
2017	1683.4	17,725	67,678	32.3	123.2
2018	1683.7	20,651	78,848	37.7	144.1
2019	1675.6	18,393	70,226	33.5	128.1
2020	1673.0	16,970	64,795	30.5	116.6
Cumulative	N/A	113,948	435,073	207.4	792.6

In 2020, the economy could have gained approximately 30.5–116.6 million work hours if individuals with SMI recovered and found employment. Cumulatively, from 2014–2020, the economy could have gained between approximately 207–793 million work hours.

Additional Real Economic Output

Table 7 reports annual and cumulative estimates of additional real economic output that could have contributed to gross domestic product from 2014–2020 had the individuals with SMI been employed.

Table 7: Additional Output if Recovered Individuals Gained Employment, 2014–2020

Year	Labor Productivity	Additional Output (in billions)	
		Lower Bound (11%)	Upper Bound (42%)
2014	$67.11	$1.6	$6.1
2015	$68.10	$1.5	$5.7
2016	$68.87	$1.9	$7.3
2017	$70.87	$2.3	$8.7
2018	$73.54	$2.8	$10.6
2019	$76.10	$2.6	$9.7
2020	$78.32	$2.4	$9.1
Cumulative	N/A	$15.1	$57.2

In 2020, real output could have been $2.2–$8.5 billion greater if 11–42 percent of individuals with SMI recovered and found employment. Cumulatively, from 2014–2020, the economy could have generated approximately an additional $15–$57 billion in real economic output.

Conclusion

This study finds that, of a cohort of individuals with SMI receiving state-level mental health treatment, approximately 1 million workers capable of employment were absent from the labor force cumulatively from

2014–2020. This translates to a cumulative absence of approximately 1.9 billion work hours and $136 billion in real output. Based on estimated rates of recovery from SMI, 114,000 to 435,000 absent individuals could have been employed from 2014–2020. The employment of these individuals would have increased work hours by approximately 207–793 million and economic output by $15–$57 billion. If all U.S. adults with SMI had access to efficient and effective treatment, the labor market and economic impacts could equal up to five times the estimates reported in this study.

Appendix: Previous Research on SMI and Recovery

Studies by Hegarty et al. (1994), J??skel?inen et al. (2013), and Warner (2004) focused on recovery from schizophrenia.[16] Hegarty et al. used broader criteria to diagnose the subjects and report on their recovery. The results suggested that approximately 40.2 percent of patients were considered to have shown substantial clinical improvement within a six-year period. In contrast, J??skel?inen et al. used a systematic review of individuals with schizophrenia using specific criteria for clinical recovery (loss of psychotic symptoms), functional recovery (return to pre-illness level), and duration of recovery. To achieve recovery, the patient had to meet a specific set of mental health standards over two years. The study reported that 13.5 percent of individuals with schizophrenia fulfilled the criteria for recovery. Warner reported that between 11–33 percent of individuals were likely to see recovery. The Warner estimates were found by reviewing 114 follow-up studies that included clear definitions of clinical and functional recovery. The Warner study did not specify a duration of recovery.

Menezes et al. (2006) and Asbo et al. (2022) considered recovery from psychosis.[17] Menezes et al. lacked clear definitions for clinical and functional recovery and considered various "good outcomes" to signal recovery. The Menezes et al. study reported that 42 percent of individuals with psychosis were likely to recover. Asbo et al. used a more specific methodology. The study focused its analysis on clinical recovery using the standard definition "full psychotic symptom remission and adequate functioning for minimum one year" across the bipolar and schizophrenia spectrum disorders. Asbo et al. found that 31.7 percent of individuals studied were in clinical recovery according to the standard definition.

Salzer et al. (2018) considered all severe mental illnesses, reporting recovery rates based on the specific definition of remission.[18] The study estimates that approximately 33 percent of those with a severe mental illness reported remission that lasted at least one year.

[1] "Mental Illness," National Institute of Mental Health, US Department of Health and Human Services, 2022, https://www.nimh.nih.gov/health/statistics/mental-illness

[2] "What is Serious Mental Illness?," SMI Adviser, American Psychiatric Association, 2023, https://smiadviser.org/about/serious-mental-illness

[3] Shields, Michael A., "Mental Health and Labour Market Participation: Evidence from IV Panel Data Models," University of Melborne, April 2010, https://www.iza.org/publications/dp/4883/mental-health-and-labour-market-participation-evidence-from-iv-panel-data-models

[4] Asbo, Gina., et al., "The Time is Ripe for a Consensus Definition of Clinical Recovery in First-Episode Psychosis: Suggestions Based on a 10-Year Follow-up Study," Schizophrenia Bulletin, vol. 48, no. 4, June 2022, https://doi.org/10.1093/schbul/sbac035.

[5] "What is Serious Mental Illness?," SMI Adviser, American Psychiatric Association, 2023, https://smiadviser.org/about/serious-mental-illness

[6] "The State of Mental Health in America," Mental Health America, 2023, https://mhanational.org/issues/state-mental-health-america

[7] "Mental Illness," National Institute of Mental Health, US Department of Health and Human Services, 2022, https://www.nimh.nih.gov/health/statistics/mental-illness

[8] "Mental Health Client-Level Data (MH-CLD) Annual Report," Tables 3.10a, 4.10a, 5.10a, Substance Abuse and Mental Health Services Administration, Department of Health and Human Services Administration, 2020 Mental Health Client-Level Data (MH-CLD) Annual Report | CBHSQ Data (samhsa.gov)

The study used the annual reports from 2014-2020.

[9] Multifactor Productivity, Bureau of Labor Statistics, https://www.bls.gov/mfp/

[10] "Average annual hours actually worked per worker,"Table L. Average annual hours actually worked per person in employment, OECD.Stat, https://stats.oecd.org/index.aspx?DataSetCode=ANHRS

[11] "Mental Health Client-Level Data (MH-CLD) Annual Report," Tables 3.10a, 4.10a, 5.10a, Substance Abuse and Mental Health Services Administration, Department of Health and Human Services Administration, 2020 Mental Health Client-Level Data (MH-CLD) Annual Report | CBHSQ Data (samhsa.gov)

[12] "Presenteeism," Skylar Clarine, Investopedia, February 15, 2021, https://www.investopedia.com/terms/p/presenteeism.asp

[13] The labor force includes individuals aged 16 years and older. This study uses an annual report that includes data reporting diagnoses for severe mental illness which, by definition, only applied to adults (individuals aged 18 and up). Those aged below 18 years old are not subject to an SMI diagnosis and therefore the estimates in this study apply only to the adults of the labor force.

[14] "Mental Health Annual Report 2015-2020," Tables 3.10a, 4.10a, 5.10a, Substance Abuse and Mental Health Services Administration, Department of Health and Human Services Administration, 2020 Mental Health Client-Level Data (MH-CLD) Annual Report | CBHSQ Data (samhsa.gov)

The study used the annual reports from 2014-2020.

[15] Multifactor Productivity, Bureau of Labor Statistics, https://www.bls.gov/mfp/

[16] Hegarty, James D., et al., "One Hundred Year of Schizophrenia: A Meta-Analysis of the Outcome Literature," Am J Psychiatry, 1994, https://pubmed.ncbi.nlm.nih.gov/8092334/

J??skel?inen et al., "A Systematic Review and Meta-Analysis of Recovery in Schizophrenia," ResearchGate, November 2012, https://www.researchgate.net/publication/233745347_A_Systematic_Review_and_Meta-Analysis_of_Recovery_in_Schizophrenia

Warner, Richard., "Recovery from Schizophrenia: Psychiatry and Political Economy," Routledge, 2004, http://www.psychiatry.ru/siteconst/userfiles/file/englit/Richard%20Warner%20(Author)%20-%20Recovery%20from%20Schizophrenia%20Psychiatry%20and%20Political%20Economy.pdf

[17] Menezes NM., et al., "A Systematic Review of Longitudinal Outcome Studies of First-Episode Psychosis," Psychol Med, 2006, https://pubmed.ncbi.nlm.nih.gov/16756689/

Asbo, Gina., et al., "The Time is Ripe for a Consensus Definition of Clinical Recovery in First-Episode Psychosis: Suggestions Based on a 10-Year Follow-up Study," Schizophrenia Bulletin, vol. 48, no. 4, June 2022, https://doi.org/10.1093/schbul/sbac035.

[18] Salzer, Mark S., et al., "National Estimates of Recovery-Remission from Serious Mental Illness," Psychiatric Services, vol. 69, no. 5, May 2018, https://doi.org/10.1176/appi.ps.201700401.