Government of the
District of Columbia

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A Study of the District's Unemployment Insurance Trust Fund

Produced by the
Office of Revenue Analysis

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Executive Summary

Background

The Office of Revenue Analysis (ORA) analyzed the level of the Unemployment Insurance (UI) Trust Fund balance necessary to maintain solvency for a recession and evaluated whether the program can rebuild sufficient reserves during a recovery in order to weather a second recession. Through this analysis ORA sought to achieve a solvency evaluation distinct from the Department of Labor's one-size-fits all nationwide approach.

Conclusion

ORA concludes that a $504 million fund balance will be sufficient for the fund to sustain the most likely business cycle scenario over the next two cycles and to continue inflation-level benefit increases, but employers can expect permanently increased tax contributions after the next recession. Moreover, tax rates would need to rise further than currently authorized in order to rebuild the fund balance after the second recession.

The U.S. Department of Labor (DOL) calculated a recommended reserve (as of January 2018) for the District of $406 million, and since the District had a reserve balance of $434 million at the beginning of 2018, those reserves were 1.06 times the DOL's recommended balance. ORA estimates the DOL recommended balance as of January 2020 will be $440 million.

ORA's estimated fund balance requirement is $504 million for several reasons:

- We estimate the fund balance performance over two business cycles.
- We continue annual policy increases in the maximum benefit level (equal to inflation).
- The fund declines quickly during the next recession because of a structural deficit in the financing of the UI fund. Benefits increase with employment growth, policy changes to the maximum benefit, and increases in the wages of lower-wage jobs. Tax contributions, however, are based on a taxable wage base capped at $9,000 per employee and so only grow at the pace of employment growth.
- The highest tax table available for rebuilding reserves increases taxes by less than the amount necessary to replenish reserve draws during an average length economic recovery. Without an adequate highest tax table, additional reserves are necessary at the start of a second recession.
- We do not project into the future the unusually long recovery periods and high interest earnings that helped build the current fund balance.

Proposals to decrease current tax rates, lower the fund balance or decrease the trigger for the lower tax table increase the risk that policy makers will need to enact employer tax increases during a recession or fund benefits from the District's General Fund. In fact, the long-term viability of the fund requires reforms. Possible reforms include making tax tables more responsive to inadequate fund balances and addressing the imbalance between benefit growth and contribution growth.

Part I – Unemployment Insurance (UI) Reserve and DOL Solvency Recommendation

Unemployment Insurance is a federal-state partnership. Although state jurisdictions set their own tax rates and benefit levels, the federal government maintains state UI reserves in trust, offers certain incentives to eligible state programs during recessionary periods, and determines the credits that offset the Federal Unemployment Tax Act (FUTA) payroll tax allowed for employers located in states whose funds meet certain standards. In this way the federal government maintains a certain influence over state's UI programs and therefore its solvency recommendation is worth great consideration.

The DOL measure of solvency is called the Average High Cost Multiple (AHCM). As of January 1, 2018, the District's UI trust fund balance was $434 million and the AHCM was calculated at 1.06. A measure of at least 1.0 is understood to be just sufficient for the fund to survive a recession.

The primary advantage to state UI programs that maintain the DOL solvency recommendation is eligibility to obtain a short-term, interest free loan from the U.S. Treasury. In 2019, a state reserve fund must have obtained an AHCM of 1.0 in one of the previous five years. DOL imposes additional requirements for the interest-free loans meant to discourage unsustainable tax-cutting or benefit increases. Longer-term loans with interest are also available but are repaid directly by employers through reductions in credits toward the federal employer tax.

Given the District's past fiscal insolvency and the strict measures imposed by the Home Rule Act related to the prohibition of borrowing from the U.S. Treasury, the lender for the UI program, federal UI financing may not be an option as in other states and therefore the primary advantage to maintaining the DOL recommendation may not be relevant to the District. Rather, the test of reserve adequacy for the District is that the UI fund must be able to pay benefits during a recession without borrowing from the U.S. Treasury or any supplemental funding from the District's General Fund. On the other hand, fund reserves are derived from taxes imposed on employers and it is therefore worth considering whether such reserves exceed what the District actually requires, independent of the DOL solvency calculation. The current reserves are the highest in the history of the fund, are over three times the benefits paid in 2017, and are about four times the reserve balance required for the Great Recession. The reserves are trending up, yet the reserve trigger for moving to a lower tax table requires substantially more reserves.

There are elements of DOL's AHCM calculation which may overstate reserve requirements when applied to the District's unique circumstances. The calculation of the AHCM involves a ratio that includes an average of the annual benefits a state paid during its three most costly years over the last twenty years or previous three recessions (whichever period is longer). The DOL states that the measure "includes at least three recessions to ensure some diversity of cost experience"; [1] for the District this average is based on the years 1991, 1992 and 1993.

[1] See page 13 of the Unemployment Insurance Financing Technical Guide, available at https://ows.doleta.gov/unemploy/ui_technical_assistance.asp

Several arguments can be made that this period (1991,992,1993) may not be appropriate for determining the adequacy of reserve levels measured by the DOL solvency ratio. One argument is that this period includes years in which the fund became insolvent (down to a balance of $50,000). Facing this insolvency, at the end of calendar year 1992, the District reformed tax collections for the UI program, increased the wage on which the tax can be applied, and required tax rates to increase when the fund balance drops below necessary levels to sustain the fund over the long-run. On the benefit side, eligibility requirements and benefit calculation formulas were changed. The benefit history prior to implementation of these extensive program reforms would therefore not necessarily extrapolate to the current period.

The basic DOL methodology also scales the 1991, 1992 and 1993 benefits to today's wage base, which in 2019 will be roughly 3.8 times the level of 1993. This may be an inappropriate scaling factor since covered employees earning $44,000 a year or more only receive the maximum unemployment benefit, while much of the growth in the District's wage base has been due to high-wage jobs where salaries exceed $44,000. More relevant to the analysis is the increase in the maximum weekly benefit, and the increase in employed persons covered by the fund. Finally, the District's economic and demographic landscape has changed markedly. The DOL solvency calculation in many other jurisdictions takes into account more recent high-cost benefit years. Due to the requirement to look at the experience over at least three recessions, the AHCM calculation for the District includes none of the more recent fund data. However, an employer base that is more diverse or that may have attracted more skilled or more mobile employees could lower layoff rates or length of unemployment claims in a recession.

Regardless of any arguments that the DOL solvency recommendation could overstate reserve requirements when applied to the District, UI benefits are an entitlement, which the District must pay to eligible District workers regardless of the trust fund balance. An adequate UI reserve ensures the fund can pay unemployment benefits for the full period of expected high unemployment conditions without supplemental funding or ill-timed employer tax increases. The Office of Revenue and Analysis (ORA) of the Office of the Chief Financial Officer (OCFO) conducted UI reserve analysis using a more rigorous methodology that simulates the impact of a full business cycle from recession to recovery to a second recession and evaluates the adequacy of the UI reserves and the current structure of employer pay rates. This comprehensive modeling allowed us to incorporate more recent data of the fund experience and therefore divorce the analysis from DOL's reliance on the 1991 – 1993 data. At the same time, OCFO's economists selected parameters of future economic factors to ensure any proposed deviation from the DOL solvency recommendation would take into account the risks to the District's budget during recessions. The remainder of this report provides the background of this analysis followed by recommendations for the proper reserve levels.

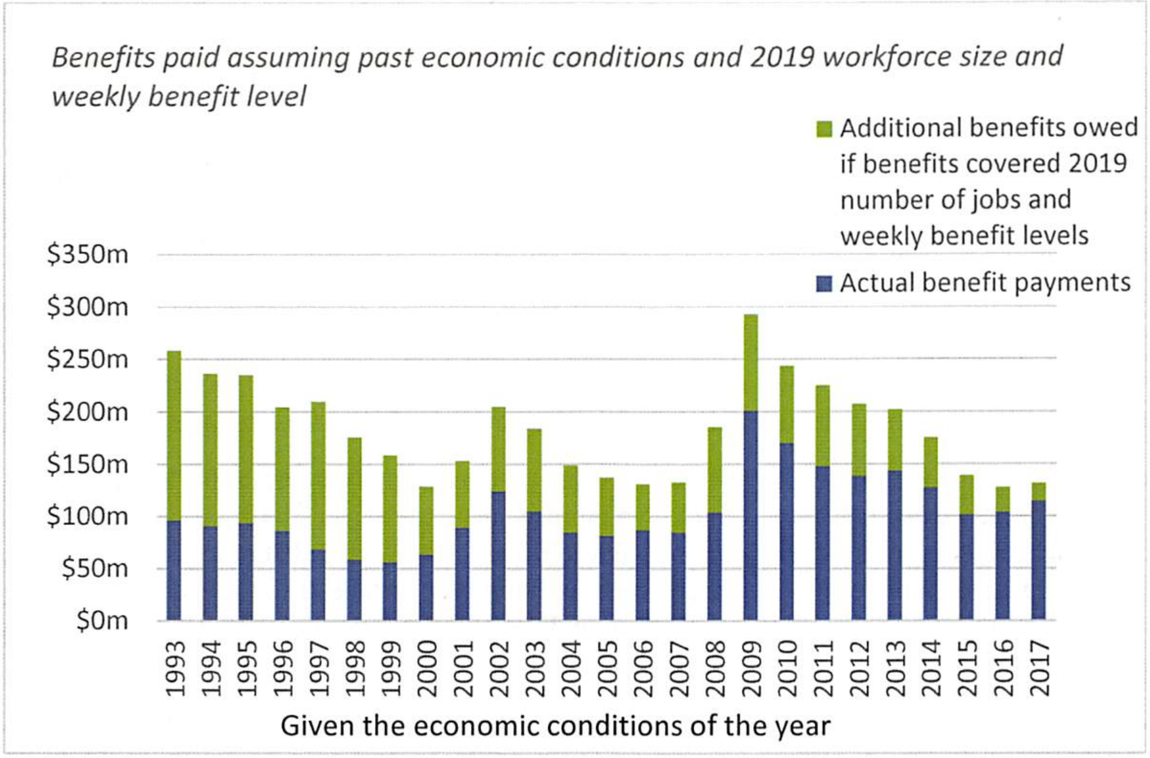
Part II – Reserve Adequacy for Recessions

There are three broad factors that influence the total UI benefits paid in any year: the number of employed persons covered by the fund (covered jobs); the average weekly benefit received by a claimant; and the severity of unemployment, measured by the total number of benefit payments made in a year, reflecting the number of individuals becoming unemployed and their length of unemployment.

Combined, increases in the average weekly benefit and covered employment will lead to benefit payouts in 2019 that are 2.36 times higher than they would have been in 1993 for any given unemployment rate. Covered employment alone is 1.46 times higher than it was in 1993 due to job growth in the District, while the average weekly benefit has grown 1.62 times over the same period due to policy changes that increased the maximum weekly benefit and more beneficiaries qualifying for the maximum weekly benefit as salaries increased. The average weekly benefit in recent years, roughly $350, is nearly $50 higher than during the Great Recession and more than $100 higher than in the 1990s.

The following graph shows how benefits paid in previous years would be much higher if they had to cover the increased number of employees and higher average weekly benefit of 2019. The unemployment conditions we use in our calculations are those actually observed in each year.

Figure One – Past benefit payments adjusted to cover today's workforce and weekly benefit levels



Due to the increases in covered employment and the average weekly benefit, future recessions we model will have larger benefit payouts than previous recessions, even if we assume the same rate of unemployment and average duration of unemployment. If recession conditions identical to those of 2009 occurred in 2019, for instance, benefit payouts would be about 45% higher, or $91 million more, than in 2009.

Table One – Projected 2019 benefits under 2009 economic conditions

	Covered Employment	Average Weekly Benefits	Benefits
2009	379,231	$303	$201,556,000
2019 projected	463,751	$360	$292,844,000
change from 2009	22%	19%	45%

Unlike DOL's methodology, the methodology used in this analysis does not select prior recession years to estimate the level of benefits to be paid in the next recession. Rather, ORA ran a scenario model of two full economic cycles, including a level of employment cutbacks and recessions which are likely and for which the fund should be prepared if policy makers want to avoid general fund financing, increased employer taxes or benefits cuts.

The modeling includes a recession beginning in mid-2020, an increasingly likely scenario according to most U.S. economic forecasters. Under the modeling, unemployment increases for two years before gradually recovering.

ORA chose to model a strong recession for mid-2020, but one only half as severe as US businesses (excluding manufacturing) experienced nationwide in the Great Recession. (Manufacturing was excluded since it is not significant in the District's economy.) The modeled recession results in two years of slightly higher unemployment than what the District experienced during the Great Recession, when federal spending, through the stimulus package, greatly tempered the recession's impact on the District and resulted in more quickly improved employment conditions.

In our scenario, the first recession occurs on top of 7% cutbacks in federal government employment in the Washington region. (Although the UI fund does not insure federal employees, the cutbacks have spillover effects on private sector employment which eventually recover but at lower employment overall.) The 7% modeled cutbacks occur over three years, cumulative (not annually).

In order to place the modeled 7% (over three years) federal employment cutbacks in context, the District has already experienced, in the twelve months prior to August 2018, a 1.8% loss of federal jobs. If such trend continues for two more years, DC will have lost 5.3% of its federal jobs. If an agency is relocated outside of the region, such as has been proposed for the US Department of Agriculture, the loss to DC would be an additional 3.3%. The District has also had prior periods of federal jobs cutbacks at levels equal to or greater than the modeled scenario:

- Over the period 1994 – 1996, DC lost 14% of its federal jobs. (From '93 to '01 the cumulative loss was 21%.)
- Between September 2011 and September 2014, DC lost 7% of its federal jobs.

Under the context of increasing federal debt, we believe it is correct to model the fund performance under the federal cutback scenario, as well as to model a recession unaccompanied by federal stimulus. Federal debt has increased from 68% of GDP in 2008 to over 100% of GDP today.

ORA modeled fund performance through 2033, a period expected to include two complete economic cycles. Table Two, below, details the economic factors assumed and projected in the modeling during each economic cycle and compares the level of such factors to the level during the economic cycle that began in 2008.

Table Two – Modeled factors compared to 2008 through current period

	2008 Great Recession	2020 Major recession[1] + plus federal job cuts[2]	2027 Minor recession
Peak unemployment rate	10.2%	10.6%	8.9%
Covered jobs at recession start	387,000	460,000	475,000
Average annual job growth over economic cycle	1.5%	0.6%	0.6%
Weekly benefit check average amount at recession start[3]	$291	$363	$401
Average annual growth in benefit check amount over economic cycle	1.8%	1.3%	1.4%
Peak average contribution per covered employee	$381	$437[4]	$380[4]
Economic cycle length	11+ years	7 years	7 years
Average interest rate on fund reserves	2.8%	1.5%	1.5%

<u>Table Notes</u>

1. Half as severe as the nationwide effect of the Great Recession on US businesses (excluding manufacturing)
2. 7%, cumulative, over three years
3. Average was $347 in 2017 due to large policy increase enacted in 2016
4. at Tax Table VI

Fund Performance in First Recession

Unemployment under the modeled scenario reaches 10.6% in 2021 and 10.4% in 2022. Total benefits paid by the fund reach $285 million in 2022. The fund balance at the end of 2021 is low enough to trigger higher authorized taxes for employers (Tax Table VI). After accounting for projected contributions and reserve interest, we find that the fund will draw $349 million between 2020 and 2023.

Table Three – Fund performance under first modeled recession

	Beginning Fund Balance	Unemployment Rate	Covered Employment	Contributions	Benefits	Reserve Change Before Interest	Interest Earnings	Reserve Change After Interest	Ending Fund Balance
2019	$ 462,742,454	5.60	463,751	$ 127,771,034	$ 117,969,933	$ 9,801,101	$ 9,352,860	$ 19,153,961	$ 481,896,416
2020	$ 481,896,416	7.42	459,864	$ 124,320,130	$ 211,828,565	$ (87,508,435)	$ 6,572,133	$ (80,936,302)	$ 400,960,114
2021	$ 400,960,114	10.62	448,434	$ 127,408,877	$ 280,433,092	$ (153,024,215)	$ 4,866,720	$(148,157,495)	$ 252,802,619
2022	$ 252,802,619	10.35	451,958	$ 166,659,467	$ 285,367,346	$ (118,707,879)	$ 2,901,730	$(115,806,149)	$ 136,996,470
2023	$ 136,996,470	8.77	461,292	$ 194,640,229	$ 200,336,707	$ (5,696,478)	$ 2,012,223	$ (3,684,255)	$ 133,312,215
						2020-2023 Fund Balance Draws:		$ 348,584,201	

Our projections are calculated using regression analysis of the fund experience between the years 2004 and 2017. Data from this time period show that the total number of benefit payments in a year increases with rising unemployment rates, especially during a recession. We use this relationship to predict the number of benefit payments in the future, controlling for the changes in the size of the workforce and increases in the maximum weekly benefit (2% in non-recessionary years and 1% during the recession), consistent with the Mayor's discretion to raise benefits.

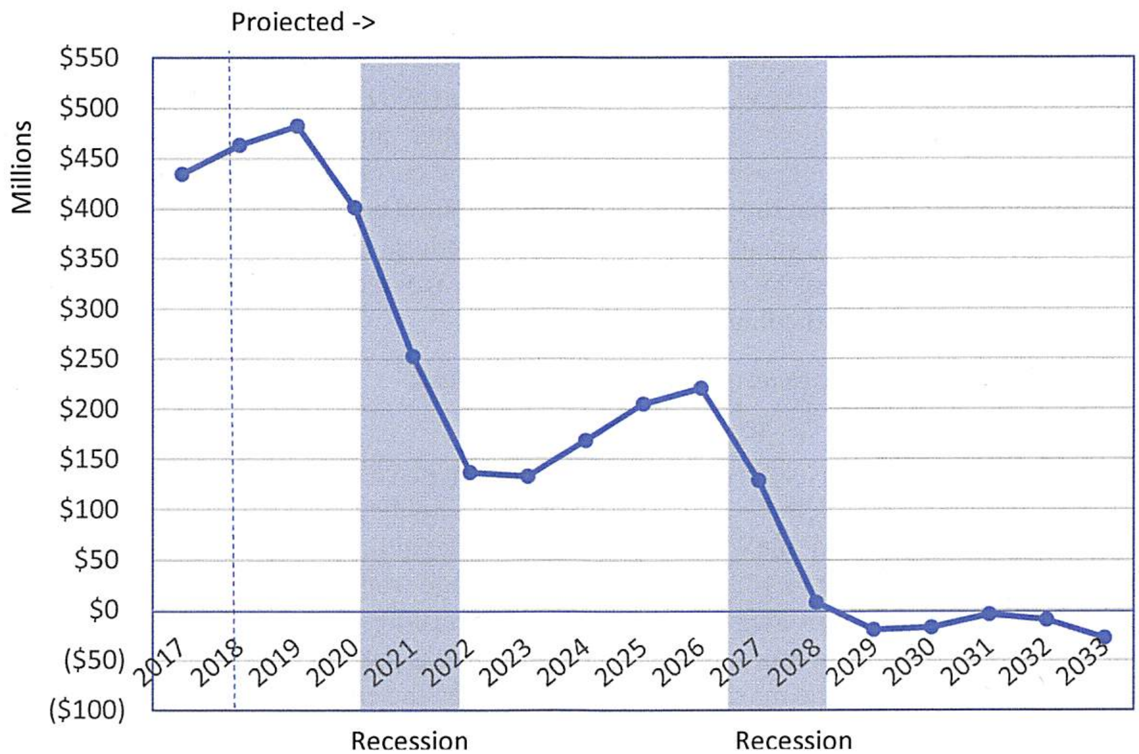
Benefits paid by the fund will be offset by contributions collected through the employer tax. Employer taxes are dependent on employer's experience with lay-offs during the prior three years and data from 2004 to 2017 show that the average employer tax rises as unemployment increases during a recession and falls during recovery. Based on this relationship we predict future contributions during recessions and recovery, adjusting for changes in the size of the workforce. We also account for the tax rate increases that are triggered when the trust fund falls below certain levels. More detail on the estimation method for benefits, contributions and fund balance can be found in the appendix.

Fund Performance in Recovery and Second Cycle

The estimated fund balance requirement of $349 million for the first modeled recession appears to indicate the District's unemployment fund is strong, given its 2017 year-end balance of $434 million. However, extending our analysis further shows that the fund cannot replenish its reserves within the timeframe of a typical economic cycle, even after the highest tax table is triggered. We modeled a seven-year lag between recessions to mirror the separation between the last two recessions (2001 and 2008). Since the 1940s the average U.S. business cycle has been between 5 and 6 years, so our chosen lag period is not the most conservative assumption.

Under modeling for a second recession that begins in 2027 (at a milder level than the 2020 modeled recession), the fund is insolvent in 2029 without supplemental funding from the District's General Fund or changes in authorized taxes. Again, this accounts for employers contributing at the highest tax table each year beginning in 2022 and allows for annual policy increases in the maximum benefit levels equal to inflation. The projected fund balance throughout the two economic cycles is displayed in Figure Two, below.

Figure Two – Trust Fund projection without reforms



Minimum Reserve Requirement - $504 million

In order to avoid the fund insolvency displayed in Figure Two, the fund requires $504 million of reserves going into a probable recession in 2020. However, the fund balance is still severely depleted after the second recession and fails to be sufficiently replenished (see Table Four).

Table Four –$504 million fund balance required by 2020 without reform

	Beginning Fund Balance	Unemploy-ment Rate	Covered Employment	Contributions	Benefits	Reserve Change Before Interest	Interest Earnings	Reserve Change After Interest	Ending Fund Balance
2020	$ 504,000,000	7.42	459,864	$ 124,320,130	$ 211,828,565	$ (87,508,435)	$ 9,204,916	(78,303,519)	$ 425,696,481
2021	$ 425,696,481	10.62	448,434	$ 127,408,877	$ 280,433,092	$ (153,024,215)	$ 5,237,766	(147,786,449)	$ 277,910,031
2022	$ 277,910,031	10.35	451,958	$ 166,659,467	$ 285,367,346	$ (118,707,879)	$ 3,278,341	(115,429,538)	$ 162,480,493
2023	$ 162,480,493	8.77	461,292	$ 194,640,229	$ 200,336,707	$ (5,696,478)	$ 2,394,484	(3,301,994)	$ 159,178,499
2024	$ 159,178,499	7.35	470,398	$ 205,593,842	$ 172,491,814	$ 33,102,028	$ 2,635,943	35,737,971	$ 194,916,469
2025	$ 194,916,469	6.55	476,599	$ 190,850,855	$ 157,368,032	$ 33,482,823	$ 3,174,868	36,657,691	$ 231,574,160
2026	$ 231,574,160	6.51	479,175	$ 171,490,717	$ 158,740,123	$ 12,750,594	$ 3,569,242	16,319,835	$ 247,893,996
2027	$ 247,893,996	7.82	475,205	$ 158,042,386	$ 252,124,569	$ (94,082,183)	$ 3,012,794	(91,069,389)	$ 156,824,607
2028	$ 156,824,607	8.94	472,110	$ 159,498,248	$ 282,205,330	$ (122,707,082)	$ 1,432,066	(121,275,016)	$ 35,549,590
2029	$ 35,549,590	7.92	479,478	$ 174,820,747	$ 202,204,074	$ (27,383,327)	$ 327,869	(27,055,458)	$ 8,494,133
2030	$ 8,494,133	6.99	486,463	$ 185,049,147	$ 182,939,407	$ 2,109,740	$ 143,235	2,252,975	$ 10,747,108
2031	$ 10,747,108	6.33	492,168	$ 182,644,352	$ 169,515,419	$ 13,128,933	$ 259,674	13,388,606	$ 24,135,714
2032	$ 24,135,714	6.36	494,479	$ 169,048,808	$ 174,615,408	$ (5,566,600)	$ 320,286	(5,246,314)	$ 18,889,400
2033	$ 18,889,400	6.37	496,901	$ 161,195,863	$ 179,286,919	$ (18,091,056)	$ 147,658	(17,943,398)	$ 946,002

Part III – Analysis of Results

Concluding that the fund will not be able to survive the second economic cycle might come as a surprise since it has been able to withstand two recessions (2001 and 2008) subsequent to the Fund's 1992 reform. Our modeled scenarios predict both higher and more sustained recession-period unemployment than the prior recessions. This reflects the current reality of a more austere federal fiscal outlook and ensures that the stress-testing of the UI fund balance does not rely on the less likely scenario of federal stimulus spending in a recession. Federal cutbacks during a recession are the exact scenario that occurred in the mid-1990s. There are additional factors contributing to the significant deterioration of the fund balance, however.

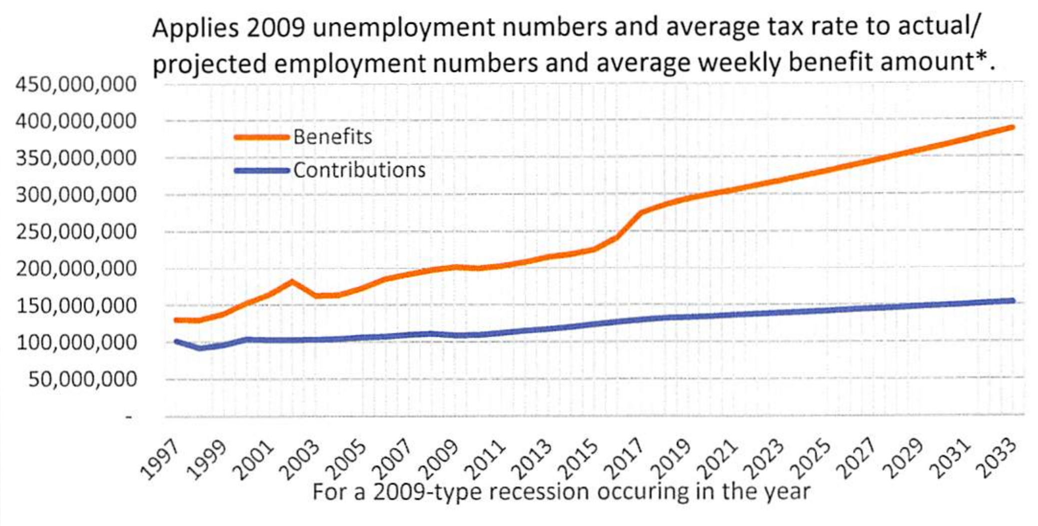
1. *Relatively Fixed Contributions versus Increasing Benefits*

While the $9,000 maximum taxable wage base has been in place since 1997, average weekly benefits have risen in part due to higher wages and in part due to policy increases in the maximum weekly benefit. Between 2016 and 2017 for example, the District authorized an increase in the maximum weekly benefit from $359 to $425. The resulting average weekly benefit of $347 was nearly $50 higher than during the Great Recession and more than $100 higher than in the 1990s. We expect future increases to be much more modest, between 1 and 2 percent a year, since recent legislation caps Mayoral increases in the maximum weekly benefit by the annual change in the consumer price index. Under our projections we allow for 1 – 2% increases in the average weekly benefit, and it rises by about $100 by the end of the modeled time period. As a result of these increases, benefit draws today and in the future will be higher than in the past for the same levels of unemployment.

In our modeled scenario of fund reserves, contributions exceed the value of benefits during the first recovery (2024 – 2026) in part due to the implementation of Tax Table VI. However, during the second recovery, benefits paid begin to exceed contributions (2032-2033). This recovery-period annual deficit occurs because the average weekly benefit payment has risen substantially over time and will continue to rise, while employers pay taxes on only the first $9,000 of employee wages. In our scenario tax rates do rise in 2022 due to the fund balance decline triggering the implementation of Table VI and delaying the recovery-period annual deficit. By the second economic cycle tax rates have no further to rise, and the increasing value of benefits deplete the fund balance.

It is helpful to view the effect of the increasing value of benefits in the face of fixed contributions by standardizing contributions and benefits to one set of economic conditions. The following graph shows what fund benefits and contributions would be each year if the unemployment rate and average employer tax rate of 2009 were held constant. In this projection we account for changes in the total number of covered employees and changes in the average benefit payment. Total contributions change as the number of covered employees changes, but the average experience rating is assumed to equal 2009's figures and Tax Table V is assumed to apply each year.

Figure Three – Benefits and contributions under 2009 conditions



*assumes increases in maximum benefit amounts of 1%.

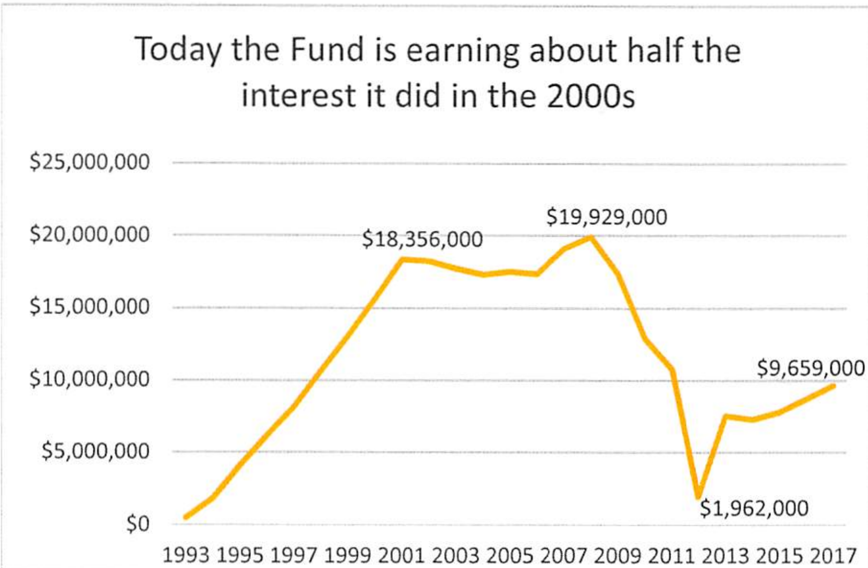
2. *Unique Conditions that Allowed for Accumulation of the Current Fund Balance*

There are several conditions which applied to the historical performance of the fund but are not expected to continue. Without these conditions, predicted fund performance is further weakened.

Condition One: Higher Interest Rates

Prior to 2010, the fund benefited from 17 years of earning federal interest on deposits at rates that exceeded 4%, contributing $235 million to fund reserves. Earnings from interest peaked between 2001 and 2008 at an average of approximately $18 million a year. Entering the Great Recession, cumulative interest accruals represented 50% of fund reserves. Currently annual interest on fund reserves is about half the pre-2009 level (see Figure Four on page 12).

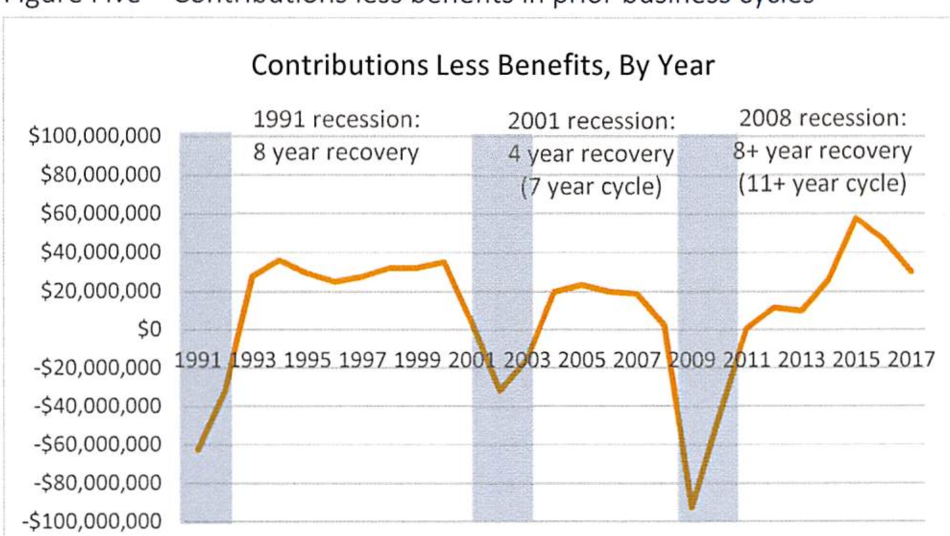
Figure Four – Annual Trust Fund interest earnings



Condition Two: Long Economic Cycles

As discussed previously in our recession modeling discussion, the average U.S. economic cycle since the 1940s has been between 5 and 6 years. However, the fund has benefited from two especially long economic cycles with lengthy recovery periods during which Fund assets could build: the 10-year cycle from 1991 to 2000 with an 8-year recovery and the current 11-year cycle that started in 2008 with 8 years of recovery thus far. In our modeling we assume a future cycle of 7 years with 4 years of recovery, mirroring the 2001 cycle and bringing the cycle closer to average length. This shortens the time during which Fund assets can build.

Figure Five – Contributions less benefits in prior business cycles



Condition Three: Three years of higher taxable wage base

As part of the 1992 fund reform, employer taxes were temporarily applied to a higher wage. In 1994, employers were taxed on the first $9,500 of an employee's wages; in 1995 and 1996 they were taxed on the first $10,000 of wages. This was an increase of 5.5% - 11% over the $9,000 taxable wage that has been in law since 1997.

Combined Impact of Economic Conditions and Fund Structure

The combination of these conditions allowed the fund to enter the 2001 and 2008 recessions with a strong reserve balance exceeding 1.4% of the wage base. In our scenario modeling, the fund is projected to enter 2020 with a lower balance, as a percentage of the wage base – approximately 1.1%.

Part IV – Tax Trigger Analysis

Under existing law, District employers' tax rates are automatically adjusted based on the level of UI fund reserves as a proportion of the insured wage base. Although the 1992 fund reform provided for six possible tax tables, only three tables have been in effect – Tables IV, V and VI (see chart below), and Table V has been in effect since 2010. Implementation of Table IV could theoretically occur again if the fund balance continues to grow, while in our recession modeling Table VI will be in effect from 2022 – 2033.

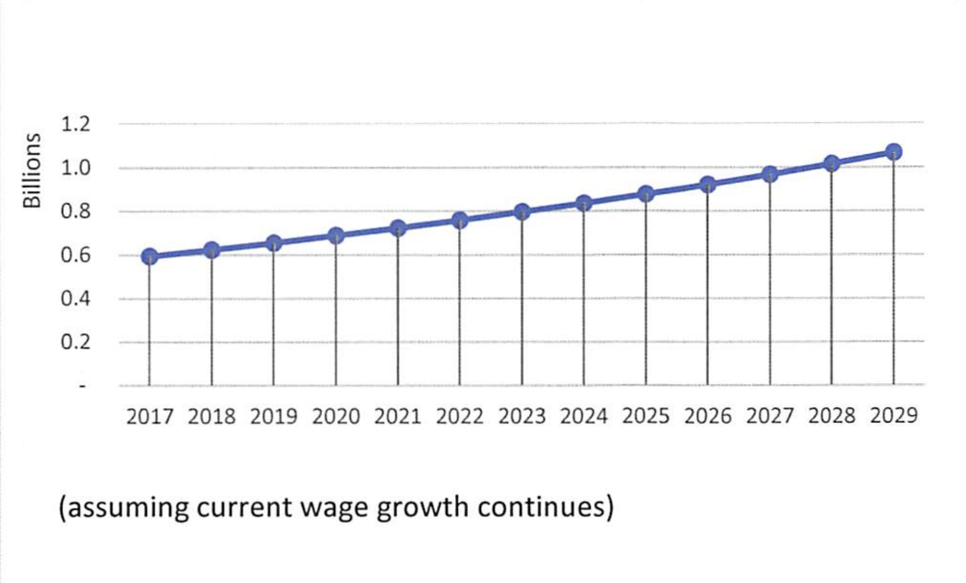
Table Five – Unemployment insurance tax tables

Table	Tax Rate Range	Required Fund Balance as % of Wages	Years in Effect, since reform
I	0.1% - 5.4%	Great than 3%	N/A
II	0.6% - 5.8%	2.5 – 3%	N/A
III	1.0% - 6.2%	2 – 2.5%	N/A
IV	1.3% - 6.6%	1.5 - 2%	2003, 2006 - 2009
V	1.6% - 7.0%	0.8 - 1.5%	1997 – 2002, 2010 - present
VI	1.9% - 7.4%	Less than 0.8%	1993 - 1996

Table IV

With a 2017 insured wage base of approximately $39.5 billion, the 2017 fund reserve of $434 million represented 1.1% of the wage base, and $592 million would have been required to implement Table IV's lower rates. However, the wage base has been growing at approximately 5% annually, so that by the end of 2019 approximately $650 million of fund balance would be required. The balance needed to trigger lower tax rates will grow by roughly $30 to $40 million a year over the next few years if wages for jobs covered by the UI fund continue to grow at their current rate.

Figure Six – Trust Fund balance needed to move to lower tax rates



We estimate that implementation of Table IV would decrease revenues by about 12%, or $15 - $20 million a year if it were to go into effect within the next few years and current low unemployment rates continued. This revenue reduction would flatline the fund balance if employers' experience ratings remain the same. However, when employers' experience ratings improve, tax rates drop further and the revenue loss from Table IV's implementation could lead to a fund balance decline of up to $20 million a year. The applicability of Table IV would then likely be quite short term, as Table V would again be triggered. Moreover, our modeling predicts that the next recession will trigger the Table VI rates.

Table VI

We estimate that implementation of Table VI would raise contributions by approximately 10%. But the higher tax rates do not raise contributions enough to keep the UI fund solvent. Our modeling shows that during the recovery after the modeled 2020-recession, fund reserves are only rebuilt to the level of $221 million, estimated to be just 0.36% of the wage base. Table VI tax rates do not increase sufficiently to restore the fund balance in a reasonable timeframe.

According to technical guidance from the Department of Labor[2], tax tables should be designed so that the increased rates lead to collections that equal 30% - 50% of the decline in fund balance that triggered implementation of the higher table. In our modeled economic scenario, Table VI is triggered at the end of 2021, when the reserve balance has fallen to $253 million. The 2021 drop in the fund balance is $148 million, so according to the DOL guidance, the next table should provide for $44 - $74 million in additional contributions. The table's 10% estimated contribution increase, however, only amounts to a $15 million increase in contributions. Fund balance available for the second recession is only $221 million, rendering the fund insolvent in 2029.

[2] See Unemployment Insurance Financing Technical Guide, available at https://ows.doleta.gov/unemploy/ui_technical_assistance.asp

Summary and Recommendations

ORA estimates the fund needs $504 million by 2020 to survive a major recession with federal cutbacks, rebuild in time to survive a minor recession in 2027, and maintain a positive fund balance through 2033. This estimate includes annual inflation-level policy increases in the maximum weekly benefit. Since the projected January 1, 2020 fund balance is $482 million if current economic conditions continue, the OCFO recommends not cutting the fund.

If the fund indeed reaches $482 million by 2020 as expected, it can survive a major recession with federal job cuts, but it will not rebuild in time to survive the next expected recession assuming a seven-year business cycle length. This may come as a surprise since the fund survived the Great Recession so well, dropping from $412 million to only $293 million at its lowest level. Given the current federal fiscal stance of greater austerity and retrenchment, the next recession will have a greater impact on the District than even the Great Recession where the impact on the District was tempered by the federal stimulus and the federal government expansion. There are several additional reasons our recommended balance of $504 million by 2020 may exceed expectations of a sufficient balance:

- A structural deficit in the fund financing due to benefits growing faster than contributions. Benefit amounts were increased, and are being increased, through policy changes and wage growth but the taxable portion of wages has been capped at $9,000 per job since 1997. As a result, fund draws during a recession will increase over time for the same levels of unemployment. If the same exact unemployment conditions we saw in 2009 were to repeat in 2021, benefit payouts would be 50% (or about $100 million) higher while contributions would increase by only 20% (or $27 million);
- During the Great Recession the fund benefited from an economic cycle of 11+ years – much longer than the average of 5 to 6 years. This meant the fund had a longer time to recover (8+ years) than usual; and
- The fund benefited greatly from interest earnings, particularly during 2001-2008 when interest earnings were close to $20 million a year. Currently interest earnings are half that.

Even with the recommend balance of $504 million in 2020, the fund will struggle in the long-term if weekly benefit amounts continue to increase but taxable wages remain capped at $9,000 per job. In our scenario where the fund starts with a $504 million fund balance in 2020, and then survives major and minor recessions in 2020 and 2027, the fund needs to dip into its reserve to pay benefits in 2032 and 2033. The reserves are required, even when the economy has recovered, unemployment is low and the highest tax table, Table VI, is still in effect. Although the Trust Fund balance is still positive through 2033, extending the modeling even without another recession would show the fund is depleted in a few years. Therefore, reforms to the UI system should be considered. Possible reforms include making tax tables more responsive to inadequate fund balances and addressing the imbalance between benefit growth and contribution growth.

Appendix - Details on REMI output and Regressions Used

Scenario Modeling: Future District Employment in a Stress-Test Scenario

We use regional economic simulation software REMI PI+ to simulate a combination of scenarios that could negatively affect the DC labor market:

Federal Job Cuts (impact on private sector)

- The federal government cuts its employment in the DC metropolitan area by 7% over three years starting in 2020, and federal jobs will not recover in the years ahead. The federal job cuts would have a significant impact on DC labor market, with DC employment being reduced by 1.4% in 2022 (relative to the baseline scenario). However, DC labor market will readjust to the Fed action and gradually regain some of the lost jobs in the future years;

Two recessions (two cycles) – We model two recessions in order to evaluate whether the Fund will not only have sufficient balance to get through a recession, but also whether the recovery is long enough to allow the Fund to re-build its reserves before the end of the expansion. The scenarios are:

- The District of Columbia experiences a relatively severe recession starting in 2020, with DC employment falling by 1.3% in 2020 and by 4.0% in 2021, relative to the baseline employment. Economic recovery starts in 2022, with job market recovering all job losses by year 2025;
- A mild recession starts in 2027, with peak job loss reaching 2.4%.

The detailed and combined impacts of the federal cuts and recessions are listed in the table below:

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
DC Employment Effect Due to Fed Job Cut	0.0%	-0.6%	-1.0%	-1.4%	-1.3%	-1.2%	-1.1%	-1.0%	-1.0%	-0.9%	-0.9%
2 DC recessions	0.0%	-1.3%	-4.0%	-3.3%	-1.9%	-0.6%	0.2%	0.1%	-1.2%	-2.4%	-1.4%
Combined Employment Effect*	0.0%	-1.9%	-5.0%	-4.7%	-3.2%	-1.8%	- 0.95%	-0.9%	-2.2%	-3.3%	-2.3%

*Relative to the normal growth scenario

The REMI PI+ scenario output yields the following District unemployment rate and projects the number of covered jobs for the Fund:

	Unemployment Rate	Covered Jobs
2019	5.6	463,751
2020	7.42	459,864
2021	10.62	448,434
2022	10.35	451,958
2023	8.77	461,292

2024	7.35	470,398
2025	6.55	476,599
2026	6.51	479,175
2027	7.82	475,205
2028	8.94	472,110
2029	7.92	479,478
2030	6.99	486,463
2031	6.33	492,168
2032	6.36	494,479
2033	6.37	496,901
2034	6.38	499,335

Regression Modeling, Part I – Predicting the Fund's "average weekly insured unemployed" and calculating total annual benefits

We used the relationship between District unemployment rate and the number of insured unemployed over the timeframe 2004 – 2017 to predict future insured unemployed based on the REMI PI+ output for unemployment. The regression used two independent variables - (X_1), the District unemployment rate, and (X_2) a dummy variable representing whether recession-induced unemployment conditions were present that year. The dependent variable (Y) is the "Weeks compensated for all unemployment" from the annual DOL claims data, on a per-person basis (calculated by dividing that by the number of covered plus reimbursable employees).

Historical Data:

Year	Unemployment (X_1)	Recesssion variable (X_2)	Weeks divided by covered and reimbursable employees (Y)
2004	7.8	0	0.741039427
2005	6.4	0	0.68231034
2006	5.8	0	0.653187302
2007	5.5	0	0.664848481
2008	6.4	1	0.951985478
2009	9.3	1	1.447549689
2010	9.4	1	1.252513596
2011	10.2	0	1.133329421
2012	9	0	1.046215251
2013	8.5	0	1.014670516
2014	7.8	0	0.878061701
2015	6.9	0	0.700496828
2016	6.1	0	0.648459568
2017	6.1	0	0.670288379

The output of the regression is the equation is $Y = -.062309 + .1188303(X_1) + .2854452 (X_2)$. The X_1 coefficient was significant with a T-stat of 8.99 and the X_2 coefficient was significant with a T-stat of 5.94; the equation had an R-squared of .94.

We used the REMI PI+-generated District unemployment rate and employment effects to estimate covered and reimbursable jobs, and we used the regression prediction of weeks divided by covered and reimbursable employees to calculate the predicted total weeks compensated each year. Since the fund reserve only depends on covered employees, we calculated the total weeks compensated for covered employees at either 94% (for a nonrecession year) or 92% (for a recession year) of the total for covered and reimbursable employees. (The 94% and 92% are based on the actual proportion in recent years.)

To derive the total benefits paid from the total weeks compensated, we estimate the average weekly benefit. First, we estimate the average maximum benefit, based on 2018's $432 maximum. We then grow the maximum for assumed cost-of-living increases, using 2% in a non-recession year and 1% in a recession year. The average weekly benefit is found by multiplying 2017's ratio of average weekly benefit to maximum weekly benefit (.816729). The total annual benefits paid are equal to the total weeks compensated for covered employees times the average weekly benefit.

Regression Modeling, Part II – Predicting contributions per covered employee and calculating total contributions

The amount of tax contributions paid per covered employee was modeled for the same period, 2004 - 2017. During this time, one tax table was in effect (Table V) and the taxable wage was constant ($9,000). The only variables affecting annual changes in the level of contributions per employee are changes in individual firm's experience ratings or changes in the mix of firms at various experience levels. Because experience ratings are based on an employer's history of employee claims over a prior three year period, we chose to regress the Fund's average contributions per covered employee (Y) against a lagging three-year average of the District unemployment rate (X_1). This produced a regression with a significant intercept (T stat 2.96) and coefficient (T stat 7.34) and an R-squared of .82. The output was $Y = 94.55 + 30.54(X_1)$.

Year	Past 3 year average unemployment rate (X_1)	Contributions per covered employee (Y)
2004	6.5	$287
2005	7.0	$284
2006	7.0	$286
2007	6.7	$272
2008	5.9	$275
2009	5.9	$287
2010	7.1	$329
2011	8.4	$381
2012	9.6	$376
2013	9.5	$376

2014	9.2	$368
2015	8.4	$371
2016	7.7	$343
2017	6.9	$323

Contributions were predicted as the product of the above numbers and the covered employment projections predicted by the REMI PI+ scenario, adjusted for the higher taxes caused by fund reserves triggering Tax Table VI. Fund reserves fall below 0.8% of the wage base as of the end of 2021, so Tax Table VI is assumed to be implemented for 2022 contributions. We used the current distribution of employer tax rates (reflecting various experience ratings) to estimate that the Table VI implementation would increase contributions by 10% over the regression-projected figures. Fund reserves were estimated to remain below 0.8% of the wage base for the entire period of 2022 – 2034, so the 10% increase was also applied to all of these years.

Additional Assumptions

We assumed fund reserves earned interest at a rate of 2.5% for 2018, 2.0% for 2019 and 1.5% thereafter.