Economic & Credit Union Update
April 2020

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Federal Reserve’s Dual Mandate

1. Stables Prices
2. Full Employment of Resources

<table>
<thead>
<tr>
<th></th>
<th>Long-Run Equilibrium Goal</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation Rate</td>
<td>2%</td>
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<tr>
<td>Unemployment Rate</td>
<td>5%</td>
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<tr>
<td>Economic Output Gap</td>
<td>0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Fed Funds Interest Rates</td>
<td>2.5%</td>
<td>0.1%</td>
</tr>
<tr>
<td>10-Year Treasury Rate</td>
<td>4%</td>
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</table>
The COVID-19 Recession will Reduce Output by 20% or More in the 2nd Quarter of 2020

The Coronavirus (COVID-19) Recession. Five external shocks are simultaneously impacting the US economy which has increased the probability and severity of a 2020 recession: (COVID-19), OPEC oil price war, trade war, Boeing 737 Max airplane, and election uncertainty. We expect gross domestic product, GDP, to decline in the 1st and 2nd quarters of 2020, which economists typically classify as a recession. We expect the economy to contract 5% at a seasonally adjusted annual rate in the first quarter and then a massive 20% in the second quarter. Expect 5% growth in the second half of 2020 as the pandemic runs its course.

Source: Department of Commerce
Significant Recession in 2020, around -3.3%

U.S. Economic Growth Rate

Inflation
Core PCE Price Index
(Percent Change From Quarter One Year Ago)

Source: Department of Commerce

Source: Bureau of Economic Analysis
Moving from Positive GDP Output Gap in 2019 to Negative Gap in 2020 With the Economy Operating Below its Potential Level of Output

**GDP Output Gap vs. Federal Funds Rate**

- **Recession**
- **Output Gap (Left Axis)**
- **Federal Funds Rate (Right Axis)**

**13 Risks to Markets and Economy in 2020**

1. Covid-19 Pandemic will cause a major recession.
2. Trade war will slow GDP growth and earnings
3. Slowing housing construction will slow GDP growth
4. Lower oil prices is negative for energy capital expenditure
5. Slowing global growth, a rising value of dollar and trade wars will reduce exports.
6. U.S. inflation moving higher
7. Negative EU government bond rates remaining through 2020, coming to an end, impacting global bond markets.
8. U.S. Investment Grade and High Yield bond spreads to widen because of lower foreign appetite.
9. New Fed leadership to be tested (will Jerome Powell be politically driven, or driven by incoming data).
10. Lower term premia in Treasuries as global central bank QE continues.
11. Valuation and fundamentals mismatch in US equities, are markets ready for a small correction.
12. Continued rise in US inequality => more dissatisfied voters => more populism coming.
13. Housing bubble burst in China, Australia and Canada => slower economic growth => Minsky Moment
Falling Credit Quality as Unemployment Rises

**CU Delinquency Rate Versus Unemployment Rate**

- Recession
- Unemployment (Left Axis)
- 4.7% Full Employment Target (Left Axis)
- Unemployment Rate Forecast
- Loan Delinquency Rate (Right Axis)
- 0.75% Natural Delinquency Rate (Right Axis)

**CU Net Chargeoff Rate Versus Unemployment Rate**

- Unemployment Rate (Left Axis)
- Net Chargeoff Rate (Right Axis)
- 0.5% Natural Chargeoff Rate (Right Axis)

Source: Department of Labor, NCUA, CUNA
Hysteresis: The Degree to Which an Economic System Returns to Its Original State after an External Shock

Top 10 Household Behavioral Changes:

1. Increase in precautionary savings
2. More space between seats at cinemas sporting events, airplanes, etc.
3. Fewer traveling for vacation and going out until vaccine developed
4. Older generations staying at home until vaccine developed
5. Less willingness to put parents in retirement homes
6. More online shopping, more online doctor visits
7. Fewer people going to fitness centers, or participating in group sports
8. More people avoiding public transportation and driving their own car
9. Health insurance premiums going up
10. Lower consumer spending
Hysteresis: The Degree to Which an Economic System Returns to Its Original State after an External Shock

Top 10 Corporate Sector Behavioral Changes:

1. Less global business travel, more video conferencing
2. More disaster planning
3. More permanent work from home solutions
4. Staggered work schedules, more distance between seats in offices, fewer cubicles
5. Fewer stock buybacks, lower dividend payouts
6. Health insurance costs going up, higher insurance premiums
7. Increased pressure for paid sick leave
8. Increased pressure for health benefits
9. Regulations forcing corporations to hold 3 months of emergency cash.
10. Increased health safety regulations for retirement homes
Record Low Interest Rates and Yield Curve Shifting Down

We expect the Fed to keep the fed funds rate at 0.1% during 2020 and 2021. The Fed believes the new **neutral/equilibrium fed funds rate** is 2.5%, the rate which is neither accommodative or restrictive. Interest rates will “normalize” in 2021 at levels below previous plateaus due to lower real interest rates and lower expected inflation. The increase of the size of the Fed’s balance sheet will lower the term premium on long-term bonds. Expect the 10-year Treasury bond interest rate to stay below 2% during 2020-2021. Expect the yield curve to steepen over the next two years as short-term interest rates fall faster than longer term interest rates, which typically leads to upward pressure on financial institutions’ net interest margins.
Zero Real Interest Rates, Lower Inflation & Falling Inflation Expectations are Pushing Nominal Interest Rates to Record Lows

Inflation (CPI) (year over year % growth)

Nominal Interest Rates, Real Interest Rates and Inflation Expectations

Nominal Interest Rates = Real Rates + Expected Inflation
Credit union deposit interest rates will fall significantly in 2020 due to the Federal Reserve pushing the Fed Funds interest rates to around zero. Certificate of deposit rates will fall below 1% and MMDA interest rates will fall to 0.25%. Expect the Federal Reserve to keep short-term interest rates around zero until late 2021.
CU Yield on Assets Could Fall to Record Low 3% in 2020 as Interest Rates Fall to Record Lows and Loan Growth Slows
Auto and Home Sales Dropping to Recession Levels in 2020-2021

Expect vehicle sales to plummet in the second quarter to around 8 million, approximately half the 16.5 million pace considered normal due to the COVID-19 recession. U.S. vehicle sales fell to 11.3 million unit seasonally-adjusted annualized pace in March, down from 17.3 million units one year earlier, a 35% drop, due to closed dealerships and a stay-at-home order. The need for new cars is reduced as people are not putting miles on their vehicles. Vehicle sales will fall to levels not seen in 40 years due to fewer people employed, high levels of pandemic uncertainty and low stock prices.

The Pandemic Recession will reduce potential homebuyers’ jobs, income and confidence and therefore lead to a 30% drop in home sales. Home prices will fall but not as far as sales. Mortgage agreements effectively constrain many homeowners from selling properties at a loss. So sellers must delay any planned sale until the economy recovers and home prices increase.

Existing home sales fell 2% in January from a year earlier, falling to a 5.35 million annual rate. Home inventories remain tight (1.88 million) leading to median home prices rising 5.4% year over year.
Falling Stock Prices and Slower Home Price Growth Rates will Reduce Household Wealth and Consumer Spending

Household balance sheets have deteriorated significantly as stock prices have fallen into “Bear Market” territory. This will cause a negative wealth effect and reduce spending on consumer durables.

The S&P 500 Price-Earnings ratio fell to 22.93 in March 2019, below the past 22-year average price-earnings ratio of 26.8 but above the average since 1950 of 19.1. This price-earnings ratio is the Shiller Cyclically Adjusted Price-Earnings ratio (CAPE) which is based on the average inflation-adjusted earnings from the previous 10 years.

Home prices rose 5.0% over the last year, due to rising home demand colliding with a lack of housing inventory for sale. We expect home price growth to turn negative due to falling demand and increasing supply from the COVID-19 recession.
Consumers’ Confidence Will Decline in 2020

The saving rate (savings / disposable personal income) rose to 8.1% in December from 7.2% in December 2018. Savings should remain high as lower consumer confidence leads consumers to save rather than spend. In this environment of rising savings, spending gains will be highly dependent on income growth and consumers preferences for additional savings.

Consumer Confidence continues to fall rapidly, not surprising given the continued expansion of shutdowns and massive job losses. The stay-in-place orders are limiting consumers movement and opportunities to shop and spend. Confidence will fall further. There is uncertainty related to how far and how fast will confidence decline.

Consumer Confidence Index will fall due to slowing labor market.

Consumer Sentiment Index will fall due to more volatile stock prices. Slowing GDP growth will lower consumer confidence and also lower the demand for credit.
The U.S. dollar rose 2.0% over the last year. Market expectations are for the Fed to reduce interest rates over the next year which will reduce the value of the dollar. The past rise in the value of the dollar will reduce the cost of imports to U.S. residents but raise the cost of exports from the point of view of foreign buyers. This will worsen the trade deficit and slow economic growth.

A country’s exchange rate partly represents international investors’ confidence in its government policies.

The price of a barrel of oil fell to 23.59 in March due to the OPEC/Russian Price War, below the $56.96 one year earlier, a 58% decrease. This will decelerate energy investment but increase consumer spending.

Oil Economics: $P_{oil} = $10 => $P_{gas} = $0.25 => growth 0.3% - 0.5% over next two years.
Slowing Credit Union Loan Growth in 2020

Expect loan balances to grow only 2% in 2020 as the economy enters a recession, consumer confidence falls and pent up demand for cars and appliances becomes satiated.

The COVID-19 pandemic will push the economy into recession and increase the unemployment to over 15%. Consumer will pay off existing debt and increase savings to prepare for potential layoffs. The government decreed shutdown has reduced consumer spending and therefore credit demand. Credit unions may tighten lending standards on credit card and auto loans as credit quality deteriorates. As the unemployment rate rises, delinquencies will rise and credit worthiness will fall dramatically.
Savings balances are expected to rise 12% in 2020 due to fears of the COVID-19, savings at the gas pump, falling consumer confidence, and modest membership growth. Savings balances are driven by the following 9 factors: 1) ↑ Wealth/Income => ↓ Savings, 2) ↑ Interest Rates => ↑ Savings, 3) ↑ Price Oil => ↓ Savings, 4) ↑ Income Growth Expectations => ↓ Savings Incentives, 5) ↑ Balance Sheet Repair => ↑ Savings, 6) ↑ Retirement Catchup (underfunded HHs near retirement) => ↑ Savings, 7) ↑ Risk/Uncertainty => ↑ Precautionary Savings, 8) ↑ Demographic Changes (fewer households in working age group) => ↓ Aggregate Savings, 9) ↑ Income Inequality => ↑ Savings of High Income Households.
Yield-on-Assets Falling to Record Lows

Expect yield-on-asset ratios to fall to a record low of 3.25% in 2020 due to record low interest rates and slow loan growth. Credit union loan growth of 2% in 2020 will shift assets toward low yielding investments and away from higher yielding auto and mortgage loans (mix effect). This will push credit union assets yields to 3.25% in 2020. The COVID-19 recession will keep the 10-year Treasury note interest rate around 1%. The Fed will keep the fed funds interest rate at 0.10% during 2020 and 2021 lowering the yields on short-term credit union investments (rate effect).
Falling short-term interest rates in 2020 will decrease credit union cost of funds to a record low of 0.50%. Surplus credit union liquidity will cause credit union deposit interest rates to fall quickly as market interest rates decrease. With certificate of deposits making up only 22% of total credit union savings balances today, down from 34% in 2007, falling market interest rates today will reduce cost of funds sooner than it did during the last falling interest rate cycle of 2008. Low market interest rates will encourage members to shift funds out of term certificate of deposits and into cheaper core deposits (share drafts, regular shares and MMDA), creating a liability mix effect which will also push down cost of funds.
Net interest margins will decrease to record lows in 2020 as asset yields fall faster than cost of funds. Credit union net interest margins reached the lowest in history in 2013 due to historically low interest rates and excess liquidity. This will occur again in 2020 with net interest margins falling to 2.75%.

Deregulation over the last 30 years has increased competition in the financial services arena, resulting in lower net interest margins. For an individual CU, margins will also be determined by local market demographics: population growth, median household income, local industry, age trends. Tight margins are forcing CUs to increase the array of financial products and services offered while at the same time boosting efficiency and productivity.
Operating expense ratios will decline over the next 2 years as the growth rate in assets exceed that of operating expenses. Credit unions will reduce new hiring and pull back on expense growth. Lower consumer loan processing costs due to decline in consumer lending. Decreased credit and debit card costs consistent with lower transaction costs.
Fee income as a percent of average assets will continue its 12 year decline. The economic recession, however, may increase some penalty fee income. But web and mobile banking is providing members easier access to account balance information which reduces penalty fees. Fees from checking accounts serves as the single largest source of credit unions’ fee income. The average percentage of fee income derived from nonsufficient funds (NSF), overdraft, and courtesy pay fell to 34% recently.
Falling “Other Income” Ratios

Interchange income will decline in 2020 as the number of debit card and credit card swipes fall 30-40% due to the stay-at-home orders and therefore a big drop in consumer spending. The mortgage refinance boom, however will boost loan origination fees and “gains on sale” of mortgages during the first half of 2020, therefore offsetting some of the loss in interchange income.

The interchange fee cap rule (October 1, 2011) capped the maximum fee charged per debit card transaction to 21 cents (plus an additional 2-3 cents for fraud prevention) for institutions greater than $10 billion.
Provision for loan loss ratios will increase in 2020 due to rising loan delinquency and loan chargeoffs. Rising loan net charge-offs ratios (1.00%), a weaker labor market, and falling home prices will double loan loss provisions to 0.80% of average assets. This will be significantly above the historical average of 0.35%-0.45%. This will have a significant negative impact on earnings.
Falling Return-on-Asset Ratios

Credit union return-on-asset ratio will fall by more than half to 0.40% in 2020. Falling asset yields – due to slower loan growth and lower market interest rates - will outpace lower funding costs. This will decrease net interest margins. Rising loan charge-offs will also increase provision for loan loss expense.

The disparity between large and small credit unions return-on-asset ratios remained large in Q4 2019. Credit unions with assets exceeding $1 billion reported ROA ratios of 1.03%, roughly twice that reported by credit unions with assets less than $100 million.
Membership Growth Slows

Credit unions should expect membership growth of 1.0% in 2020 due to slowing loan growth and weaker job growth. This will push the total number of credit union memberships to 125 million by year end 2020, which is equal to 33% of the total U.S. population. In the last 12 months ending in Q4 2019, credit union with assets over $1 billion reported 6.1% membership growth, compared with less than 1% for credit unions with assets less than $100 million. The 2,344 credit unions with assets less than $20 million reported a 0.9% decline in memberships.
The Short-Term Debt Cycle and Forecasting Recessions

Growth Rate Gap
Loan Growth Less Deposit Growth

-2.9%
Credit Unions have always depended
On a rate of borrowing that is splendid
By consumers for whom
Their means to consume
May soon find them overextended
Economic Forecast

• Economic Growth: The COVID-19 pandemic has resulted in a severe and rapid slowdown in economic activity. While economic growth in the first quarter of 2020 started on solid footing, it quickly deteriorated as the effects of the COVID-19 virus intensified. The most immediately-affected industries—recreation, transportation, and food services and accommodation—add up to $2.1 trillion in annual spending (14% of total consumption spending). This consumption is likely to dry up almost completely for weeks if not months, with the effects reverberating through other sectors as well. As a result, we expect a contraction in GDP in the first quarter (-5%, annualized quarterly growth rate) followed by a significantly larger contraction in the second quarter (-20%, annualized quarterly growth rate). Assuming we pass the peak of the virus by then, we expect economic growth to bounce back in the third quarter (5%, annualized quarterly growth rate). But growth will remain muted as supply chains rebuild, many businesses are forced to close indefinitely, and consumers remain cautious. We expect economic growth to build momentum in the fourth quarter (5%, annualized quarterly growth rate) with production and service-sector activity coming back online, and pent up consumer demand driving growth. We anticipate annual growth for 2020 to fall 3.25% and economic growth in 2021 to rebound to 3.00%.

• Inflation: As a result of the plummeting consumer and business demand coupled with the steep decline in oil prices (due to the oil-price war between Saudi Arabia and Russia) we expect inflation to slow to 1.00% in the first quarter. As demand falls even further in the second quarter, we forecast significant price deflation (-5.00%, annualized quarterly growth rate). As demand and economic growth rebound in the latter half of the year, we expect inflation to reach 1.50% (annualized quarterly growth rate) in the fourth quarter and -0.63% for the year. As the economic recovery proceeds and we move back toward the long-run equilibrium growth path, we expect annual inflation to hit 1.70% in 2021.

• Unemployment: Reports of unprecedented numbers of unemployment claims in mid-March suggest that the near cessation of economic activity as a result of the COVID-19 response will have a significant impact on unemployment across a wide range of sectors. Workers in the service sector (e.g., hospitality, travel, leisure, food service, retail, and transportation) are experiencing job loss and reduced hours due to collapsing consumer demand. Moreover, supply side disruptions indicate that jobs in the manufacturing sector (e.g., auto manufacturers) are also at risk. By the end of the second quarter, we expect the unemployment rate to increase to 15.0%, and then fall to 12.50% in the third quarter. As economic activity resumes towards the end of 2020, we expect unemployment to fall slightly but remain elevated at 10.0%, well above our previous 2020 year-end forecast of 3.50%. We expect the unemployment rate to fall further to 7.5% in 2021 as the economic recovery extends throughout the economy.

• Fed funds Rate: To boost household and business confidence, the Federal Reserve’s Federal Open Market Committee (FOMC) cut the federal funds target rate twice in March resulting in a target range of 0.00% to 0.25%. CUNA economists expect the federal funds target rate to remain unchanged for 2020 and 2021.

• 10-Year Treasury: We expect the 10-Year Treasury rate to stay relatively low as investors look for safe investments. As the economic outlook improves in the latter half of the year, the 10-year Treasury rate will likely increase slightly but remain near historically low levels.
## Economic Forecast – April 6th, 2020

<table>
<thead>
<tr>
<th>Growth Rates:</th>
<th>Actual Results</th>
<th>Quarterly Results/Forecasts</th>
<th>Annual Forecasts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic Growth (% Change GDP)</strong>*</td>
<td>2.43%</td>
<td>2.33%</td>
<td>-5.00%</td>
</tr>
<tr>
<td><strong>Inflation (% Change CPI)</strong>*</td>
<td>1.55%</td>
<td>1.81%</td>
<td>1.00%</td>
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<tr>
<td><strong>Unemployment Rate</strong></td>
<td>4.70%</td>
<td>3.50%</td>
<td>4.4%</td>
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<tr>
<td><strong>Federal Funds Rate (effective)</strong></td>
<td>1.18%</td>
<td>1.55%</td>
<td>0.15%</td>
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<tr>
<td><strong>10-Year Treasury Rate</strong></td>
<td>2.35%</td>
<td>1.92%</td>
<td>0.70%</td>
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<tr>
<td><strong>10-Year-Fed Funds Spread</strong></td>
<td>1.17%</td>
<td>0.37%</td>
<td>0.55%</td>
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</table>
Credit Union Forecast

• **Loan Growth:** Economic contraction, increased uncertainty, and heightened consumer caution will depress credit union lending despite historically low interest rates. We expect a significant slowdown in consumer and business loan growth, particularly auto loans. However, very low interest rates are likely to stimulate mortgage lending, particularly refinances, which will help buttress some credit unions. Lower long-term rates are also likely to induce credit unions to sell more mortgages and other long-term loans to the secondary market. We also expect members to utilize existing lines of credit—such as credit cards and home equity loans—to cover short-term and emergency expenses.

• **Savings Growth:** We expect exceptionally strong savings growth at credit unions as consumer demand dries up, discretionary spending declines, and the volatile stock market makes investments less attractive. Moreover, the federal government is currently discussing plans to provide approximately $500 billion of economic stimulus directly to consumers. We expect these transfers to increase credit union deposits—particularly in the second quarter—as some credit union members will not immediately spend the relief money.

• **Membership Growth:** We expect membership growth rates, which are heavily influenced by auto lending, to fall to 1.0% in 2020 (from 3.6% growth in 2019). With economic growth returning in 2021 and considering the significant pent up demand for consumer goods—including durable goods like automobiles—we expect membership growth to increase to 1.50% in 2021.

• **Asset quality:** As a result of the economic slowdown we anticipate a significant in unemployment and an increase in underemployment as workers’ hours get cut. This will make it difficult for many to pay their bills on time. As a result, we expect delinquency rates to increase substantially, reaching 1.25% in 2020. We similarly expect charge-off rates to increase, peaking in the third and fourth quarters at 1.00% (quarterly annualized) and settling at 0.87% for 2020. We expect this decrease in asset quality to be relatively short-lived relative to, for example, the Great Recession, when it deteriorated much worse.

• **ROA:** As the economy slows and interest rates fall, credit unions’ net interest income will decline, putting downward pressure on ROA. Additional ROA pressures include rising provisions for loan losses (as the probability of more delinquencies increases) and decreasing interchange income as people spend less. However, earnings may be buttressed slightly by strong mortgage refinancing and an increase in fees from mortgage sales to the secondary market. Our forecast shows ROA coming in at 0.20% for 2020. We believe this estimate may be conservative. At the same time, we’re hearing anecdotal evidence from credit unions that are running models that suggest that ROA for 2021 may be even lower, coming in at -0.10%. The situation is dynamic and because of that the range of estimates is fairly large.
## Credit Union Forecast – April 6th, 2020

<table>
<thead>
<tr>
<th>Actual Results</th>
<th>Quarterly Results/Forecasts</th>
<th>Annual Forecasts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Growth Rates:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Savings Growth</td>
<td>6.8%</td>
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<tr>
<td>Loan Growth</td>
<td>9.3%</td>
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<tr>
<td>Asset Growth</td>
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<tr>
<td>Membership Growth</td>
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<td><strong>Liquidity:</strong></td>
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<tr>
<td>Loan-to-Share Ratio**</td>
<td>82.1%</td>
<td>84.4%</td>
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<td><strong>Asset Quality:</strong></td>
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<tr>
<td>Delinquency Rate**</td>
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<td>Net Charge-off Rate*</td>
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<td><strong>Earnings:</strong></td>
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<tr>
<td>Return on Average Assets (ROA)*</td>
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<td><strong>Capital Adequacy:</strong></td>
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<tr>
<td>Net Worth Ratio**</td>
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*C: Current Year
**5 Year Average
*Net Worth Ratio = Net Worth / Total Assets x 100
*Return on Average Assets (ROA) = (Net Income + Dividends) / Average Total Assets x 100