

Appendix: Measuring Ownership Income

A free online appendix to *Labor Zero: AI, Automation, and the Last Employed Generation*, by David Shapiro.

The problem of household income becomes easier to govern when we can measure it. How much income comes from ownership? How widely does it reach? How much arrives through institutions that give ordinary people a durable claim on shared wealth? The Capital Allocation Ratio, or CAR, and the Public Wealth Ratio, or PWR, organize those questions. This appendix defines a common ledger, works through the capital that is required to support an income floor, and identifies the evidence that would strengthen or challenge the framework.

The mathematics begins with accounting. Thomas Piketty's identity, $\alpha = r\beta$, connects capital's share of income to the return on capital and the capital-to-income ratio.¹ The identity is useful because it keeps stocks, flows, and denominators consistent. The same discipline applies here. A ratio can describe an economic arrangement precisely without establishing that the arrangement is sufficient, optimal, or sustainable. Those questions require additional evidence.²

The Household Ledger

Begin with one household over one year. W is cash income from labor. T is government cash transfers. C is recurring cash income from ownership, which means interest, dividends, net rental income, royalties, and the capital portion of business distributions. Within C , distinguish private capital income from the cash benefits of qualifying inclusive capital, written as I_{cash} . These benefits include asset-funded payments that meet the institutional tests described below.

$$C = C_{\text{private}} + I_{\text{cash}}$$

$$Y_{\text{cash}} = W + T + C + O$$

O holds other income and unresolved classifications. Private support from relatives, for example, should not quietly become a government transfer. A pension receipt whose yield and principal cannot yet be separated should remain visible as an unresolved receipt. Publishing this residual lets another researcher see where the accounts are incomplete. It also prevents a clean-looking ratio from concealing a messy classification.

A useful implementation keeps two accounts side by side. The recurring-income account measures the resources that a household can expect to receive again. The financing

account records how the household covers any remaining spending, whether by selling assets, drawing on savings, or taking on debt. A retiree can be financially secure through planned drawdowns while showing little current capital yield. A younger household can meet today's bills by borrowing while becoming less secure. Keeping the accounts separate makes both situations visible without forcing them into the same ratio.

W, T, C, and O are analytical categories, so every implementation needs a bridge to its source data. A public dividend may appear as a transfer in official statistics. If that dividend qualifies as inclusive capital here, subtract it from T when you add it to C. The household receives the same dollars. Reclassification changes the description of where those dollars come from, not the household's resources. Personal income as measured by the Bureau of Economic Analysis, or BEA, also includes imputed and accrued items beyond this cash ledger, so the BEA measure is a reconciliation benchmark, not an interchangeable denominator.³

Count recurring receipts after the costs required to earn them. Separate an owner's labor from the return on the business. Do not count pass-through profits and their later distribution twice. Asset sales, borrowing, and withdrawals of principal belong in the financing account. They can fund consumption, but they are not recurring income. Report investment gains separately from recurring receipts. When a source cannot support these distinctions, label the resulting measure as a receipts proxy and show what remains unresolved.

How the Ratios Fit Together

With those definitions, the cash versions of the two ratios are straightforward:

$$CAR = \frac{C}{W + T}$$

$$PWR_{\text{cash}} = \frac{I_{\text{cash}}}{Y_{\text{cash}}}$$

CAR compares ownership income with wages and transfers. PWR identifies the part of household resources supplied through qualifying shared institutions. The inclusive payment already appears in C and Y_{cash} , so it is never added to total income a second time.

When O is zero, CAR converts directly to capital's share of household income. A CAR of 0.25 means a 20 percent capital share. A CAR of 1 means 50 percent, a CAR of 2 means 66.7 percent, and a CAR of 4 means 80 percent.

$$\text{Capital share} = \frac{CAR}{1 + CAR}$$

So the two ratios describe different features of the same income stack. A household with a CAR of 4 and a cash PWR of 25 percent could receive 20 percent of its income from wages and transfers, 55 percent from private capital, and 25 percent from inclusive capital. Shared institutions supply 31.25 percent of that household's capital income. Broad ownership does not require every asset to be publicly held.

The conversion changes when other income remains outside W, T, and C:

$$\text{Capital share} = \frac{(1 - O / Y_{\text{cash}}) \times \text{CAR}}{1 + \text{CAR}}$$

A household with W = 40, C = 10, and O = 50 has a CAR of 0.25, but only 10 percent of its total income comes from the identified capital flow. At the other boundary, when wages and transfers are zero, CAR has a zero denominator. Report that population separately and show its capital-income share and its income level. Do not manufacture a finite ratio by inserting a tiny denominator. Signed losses also require separate reporting, because ordinary percentage bounds assume nonnegative components.

CAR contributes no new statistical information beyond its equivalent capital share in a fully classified ledger. Its purpose is to direct attention towards ownership participation. PWR adds the institutional distinction by showing which resources arrive through shared, durable claims.

Count the Benefit Once

A qualifying inclusive-capital institution must meet five tests. The first is broad eligibility within a defined polity. The second is a rule-based path from assets to beneficiaries. The third is genuine backing by yielding assets. The fourth is that benefits are independent of employment. And the fifth is durable governance. Each test should be recorded as met, unmet, or unresolved, with the relevant evidence. Public ownership alone is insufficient. A fund that accumulates assets while transmitting nothing to households does not create a household income floor.

Cash is the simplest channel to trace, but public wealth also finances services. The broader PWR needs a matching resource account. Let I_{services} represent the qualifying asset-funded services attributable to the household, and let S_{all} represent all comparable services within the declared boundary:

$$\text{PWR}_{\text{adjusted}} = \frac{I_{\text{cash}} + I_{\text{services}}}{Y_{\text{cash}} + S_{\text{all}}}$$

Suppose a household has 50 units of cash income and receives 20 units of services, of which 10 units are asset-funded. Its adjusted PWR is 10 out of 70, or 14.29 percent. Adding

only the qualifying service to the denominator would produce 10 out of 60 and inflate the comparison. The national accounts already distinguish disposable income from adjusted disposable income, which includes social transfers in kind. That distinction offers a useful model for keeping cash and service-inclusive measures separate.⁴

The allocation of services should follow their use or a defensible eligibility model, with the valuation method stated. Equal shares across the population may be reasonable for one service and misleading for another. For example, childcare reaches families with young children, and transit benefits depend partly on where people live. When the available data support only a range, publish the range. The objective is to estimate the benefit that reaches a household, not to divide a public budget until the result resembles a universal dividend.

Trace each benefit from source to destination. Investment income, a treasury transfer, and the school service it finances are successive stages of one flow. They are not three household benefits. Allocate only the share of the service that is financed by qualifying assets. An actual tax saving is already reflected in disposable income, so it cannot also be added again to that denominator. A service and the taxes that are supposedly avoided by providing it must not both enter the numerator.

Stabilization needs an additional comparison. What would household costs, taxes, or services have been without the fund? Keep that estimate separate from observed cash and services until its assumptions and household incidence can be examined. The aim is to make every claimed benefit traceable.

Income Before Ratios

The following annual ledgers are illustrative, in thousands of dollars. They are not estimates of a typical household. Taxes are zero, other income is zero, and essential spending is fixed at 50. The capital column includes the inclusive cash amount shown in parentheses.

The table shows illustrative household ledgers. Amounts are in thousands of dollars, and C includes I_{cash} .

Scenario	W + T	C (I_{cash})	Income	CAR	PWR
80/20 starting point	80	20 (0)	100	0.25	0%
Wages halve	40	20 (0)	60	0.50	0%
Wages disappear	0	20 (0)	20	Undefined	0%

Scenario	W + T	C (I _{cash})	Income	CAR	PWR
Ownership composition	20	80 (25)	100	4.00	25%
Before joint shock	40	20 (10)	60	0.50	16.7%
After joint shock	0	10 (5)	10	Undefined	50%

Losing wages can raise the capital-income share to 100 percent while leaving the household unable to cover necessities. The joint shock is even more revealing. In that case, wages disappear and both capital payments halve. PWR rises from 16.7 percent to 50 percent while total income falls from 60 to 10. The ratio improves because the denominator collapses. Neither metric should receive credit for that outcome.

The safeguard is an income-level test. Let B be the cost of an essential basket. For the simplified ledger above, with no taxes or unresolved income, the required ownership-income floor is:

$$C_{\text{required}} = \max(0, B - W - T)$$

This expression identifies the gap. If wages fall and transfers do not fill that gap, other recurring income must fill it. For actual households, calculate the gap after direct taxes and account for services that already meet essential needs. Temporary borrowing or asset drawdowns can bridge a disruption, but their duration and repayment belong in the financing account. Report disposable resources relative to B, and report private and inclusive capital income separately relative to B. Those levels reveal whether ownership is actually supporting the household.

Transfers remain a possible route through the accounts. In a one-period economy that produces 100, one household could receive all 100 as capital income, pay 60 in taxes, and consume 40. A second household receives the 60 as a transfer and consumes it. The accounts balance. So the case for inclusive capital rests on who holds the claims, how reliably they pay, and whether citizens can defend them across political and economic shocks.

A production function does not settle the household question either. The Cobb–Douglas production function assumes that labor remains essential when its labor exponent is positive, but it does not fail arithmetically as labor approaches zero. Greater substitutability in a CES model can produce a falling labor share without a falling wage bill.⁵ Automation models also distinguish displacement from productivity gains and new tasks.⁶ The question here is conditional and practical. If earnings cease to provide an adequate floor, what other claims on output sustain households?

What Existing Data Tell Us

Distribution matters before any target is chosen. Imagine 100 households, each receiving wages of 10. One household also receives capital income of 900, and the other 99 receive none. The aggregate CAR is 0.9, but the median CAR is zero. A national total can move towards ownership without ordinary households moving with it.

A first calculation that uses the Federal Reserve's 2022 Survey of Consumer Finances illustrates the issue. The principal reference year for income is 2021, and the amounts are expressed in 2022 dollars. The public-use file contains 4,595 families and five imputations. The estimates below were calculated with the appropriate weights within each imputation and then averaged.⁷

The table shows reported interest and dividends in the 2022 Survey of Consumer Finances. The figures are the author's weighted calculations.⁸

Measure	Estimate
Median annual interest/dividend income	\$0
Families receiving positive interest/dividend income	23.35%
Mean annual interest/dividend income	\$4,778
Aggregate interest/dividends as share of reported income	3.38%

This is a narrow observable ownership channel, not a complete CAR estimate. Business income combines labor and capital. Retirement receipts can include principal. And the survey's family unit differs from a Census household. But the mean and the median still tell sharply different stories. The median annual interest and dividend income is \$0, and the mean is \$4,778. Further implementation requires a documented income crosswalk, reconciliation of residuals, and survey uncertainty. These point estimates do not include confidence intervals.⁹

The survey also shows why the classification work matters. A narrow proxy based on interest and dividends changes substantially when all published mixed business income is assigned to capital.¹⁰ Neither extreme should silently become the headline estimate. A reproducible analysis would specify how it values the owner's labor, show alternative allocations, and preserve losses. It would also distinguish capital held inside retirement accounts from the income currently available to spend. Asset participation and current ownership income answer related but different questions.

Public funds supply observable transmission channels too. For Alaska's 2024 dividend cohort, the base payment was \$1,403.83 per recipient, before the separate \$298.17 energy-relief component. Multiplying the base amount by 621,902 recipients gives roughly 1.57 percent of Alaska personal income, as measured in BEA's March 2025 vintage. That calculation is a program-scale approximation, not a household PWR or household median. It holds the reporting cutoff fixed and uses base payments at face value instead of adjusted disbursements.¹¹

Norway illustrates budget transmission. Its 2024 treasury transfer from the Government Pension Fund Global equaled 18.19 percent of nonpetroleum central-budget spending. That figure is a fiscal-financing share, with a different denominator from Alaska's calculation.¹² The transfer is also distinct from a withdrawal of investment assets, because the fund reported net government inflows that year.¹³ Household PWR requires the additional step of attributing qualifying services or other benefits to households.

Research can already inform parts of the mechanism. Jones and Marinescu found no reduction in aggregate employment from Alaska's dividend, but they did find an increase in part-time work.¹⁴ Akee and colleagues found improvements in children's educational outcomes and a lower incidence of minor offenses after payments from tribal casino profits.¹⁵ These studies examine the consequences of recurring income flows. They supply evidence for mechanisms, but they leave the proposed CAR and PWR classifications and targets open to direct testing.

From Assets to Income

An income target implies a capital requirement. Let F be the investable assets that support inclusive benefits, let q be the annual payout rate, and let λ be the fraction of payouts that reach qualifying household benefits. Let p be the target aggregate cash PWR, with Y as its matching annual income denominator:

$$I = \lambda q F$$

$$\frac{F}{Y} = \frac{p}{\lambda q}$$

The ratio F/Y expresses the fund in years of household income. It is not years of GDP. The following scale calculation assumes full transmission to households. The payout rates are illustrative, not estimates of safe withdrawal rates.

The table shows the assets required per unit of final annual household income, with full transmission.

Target cash PWR	2% payout	3% payout	4% payout
10%	5.00	3.33	2.50
25%	12.50	8.33	6.25
30%	15.00	10.00	7.50
50%	25.00	16.67	12.50

At a 3 percent payout, a 25 percent share of a stipulated final income of \$100,000 requires a \$25,000 benefit and about \$833,333 of attributed assets. Adding the benefit to an unchanged \$100,000 of other income answers a different question. In that case, the benefit must be \$33,333, backed by about \$1.11 million of assets, because the denominator grows as well. If only half the payout reaches qualifying household benefits, the capital requirement doubles.

The payout rate q and the investment return r are different quantities. A portfolio can distribute more cash than it earns by selling assets, or it can earn a positive total return while paying little cash. The transmission fraction also has a boundary. A payment that enters a pooled government budget has not yet become a measured household benefit. Trace the share that reaches the declared household account after costs and other uses. Neither an impressive asset value nor a large investment return substitutes for that step.

Aggregate capacity does not determine the median PWR. The same total is distributed differently by an equal per-person dividend, an income-linked payment, and a service targeted to families with children. Moving from this table to the book's targets for the median household requires eligibility rules, payment schedules, and household income data. That is where the distributional promise becomes a measurable commitment.

Building and Maintaining the Floor

Capitalization must appear in the model. In real terms, let r be the total investment return after fees, let a be the annual contributions as a share of income, and let g be the growth rate of that income denominator. With payouts and contributions calculated on opening amounts and settled at year-end, the model is:

$$F_{t+1} = (1 + r - q)F_t + aY_t$$

$$Y_{t+1} = (1 + g)Y_t$$

Starting from zero, assume a 4 percent real return, 2 percent income growth, and eventual payouts of 3 percent. The table compares deferring all payouts during construction with paying 3 percent throughout. In the deferred case, the target describes annual payout capacity at the end of the build.

The table shows the required annual contributions as a percentage of the assumed income path.

PWR capacity	Build period	Defer payouts	Pay during build
10%	20 years	14.05%	18.64%
10%	40 years	5.68%	10.23%
25%	20 years	35.12%	46.59%
25%	40 years	14.19%	25.59%

These contributions are substantial commitments. If payouts are deferred, building a 25 percent PWR over twenty years requires contributions of 35.12 percent of income every year. Existing eligible assets reduce the amount that has to be built, but assigning an existing asset to a new fund does not create national wealth or erase the service that it previously financed. Taxes, resource revenues, equity transfers, and borrowing each have an incidence and an opportunity cost. This calculation is a conditional accounting exercise with a stipulated income path. It does not estimate how the contributions change household resources, investment, or returns.

So a real proposal should begin with its opening balance sheet. Identify the assets already available, the claims already attached to them, and the contributions expected from each source. Model population and household income consistently so that new beneficiaries do not appear without a corresponding change in the denominator or the payment obligation. Then vary returns, contribution rates, and the date payouts begin. The table supplies an auditable starting point for that discussion, instead of a favorable return assumption doing all the work.

Maintaining the floor is a separate calculation. Write lowercase f for the fund's ratio to household income, so $f = F/Y$. Once contributions stop, that ratio changes according to:

$$f_{t+1} = [(1 + r - q) / (1 + g)]f_t$$

Under the same assumptions, a 25 percent PWR falls to 20.53 percent after twenty years and to 16.86 percent after forty years. The fund still grows in real dollars, but household income grows faster. So preserving principal is different from preserving the fund's share

of the income floor. Holding the ratio constant requires contributions that satisfy this condition:

$$a = (g - r + q)f$$

Here, maintaining a 25 percent PWR requires continuing contributions equal to 8.33 percent of annual income. Maintaining a 10 percent PWR requires contributions equal to 3.33 percent of annual income. Different returns, payout rules, starting assets, and growth rates change the answer. A serious target must identify the financing that makes its timeline and persistence credible.

Prices, Risk, and Shared Wealth

Income supports living standards through purchasing power. If income and every relevant price fall by 90 percent, real purchasing power is unchanged. But a household buys a particular basket. Suppose its original essentials cost 50, half in goods whose prices fall 90 percent and half in constrained necessities whose prices rise 10 percent. The new basket costs 30. Income of 20 still leaves a shortfall. Cheaper automated output helps, but its usefulness depends on what becomes cheaper.

The same logic applies to investment income. A fund's housing or energy rents may rise because beneficiaries face higher bills. Count the net effect on their purchasing power. Physical assets can diversify an ownership base, but capturing a chokepoint is not automatically a public benefit. Software assets can become obsolete, real assets can lose value, and both can concentrate risk. A diversified, professionally administered claim can broaden ownership without making every household select investments for itself.

Test wages and payouts together. A recession may reduce both, and regional exposure can make the connection stronger. Compare fixed payments, payouts tied to current asset values, and rules based on several years of values. Smoothing can spread an adjustment across time, but it cannot erase a loss. Examine how many households fall below the essential basket and for how long.

Consolidate liabilities as well as assets. Borrowing 1,000 to purchase assets creates no new net wealth at inception. A 3 percent cash payout against a 5 percent interest cost produces a cash deficit of 20 before other costs, whatever the portfolio's eventual total return. Governance must protect the claim as well as the balance sheet. So publish withdrawal rules, fees, beneficiary rights, and the circumstances under which payments can be interrupted.

Evidence That Would Change the Conclusion

An accounting identity can be checked by arithmetic. A useful key performance indicator must also help explain something that matters. The most direct test is whether households that had larger, more durable inclusive benefits before an earnings shock go on to experience smaller declines in essential consumption, fewer arrears, or less forced asset selling afterwards. Use benefit amounts measured before the shock. A ratio that is measured afterwards may merely record the collapse in wages.

Compare households with similar starting income, wealth, debt, and needs. Then ask whether the institutional source contributes information beyond the payment's size. An ownership dividend and an equally reliable tax transfer may have the same immediate effect on spending. But differences in persistence, enforceability, financing burden, and exposure to political interruption are empirical questions. If the institutional distinction adds nothing after those comparisons, PWR's claim to measure resilience would be weaker.

Two kinds of comparison are especially useful. First, can independent teams reproduce the same ratios from the same records without large unexplained residuals or disagreements over eligibility? Second, does the added classification help predict household outcomes after simpler measures of disposable income and wealth are included? CAR's equivalent capital share cannot provide a separate independent signal. PWR's institutional distinction must earn its place through the breadth, persistence, or reliability of the benefits it identifies.

Program evaluations should trace who pays as carefully as who receives. A larger payout can be offset by higher taxes, fees, rents, or the loss of an existing service. Eligibility changes and credible comparison groups can help distinguish program effects from richer residents moving in, households retiring, or unrelated local growth. A target that survives only through undisclosed contributions or gradual depletion also fails its durability test.

The targets in this book are directional commitments to broader ownership. An optimal percentage would require a stated standard of success and a comparison with alternatives. Adequacy, stability, distribution, financing, and governance belong in that comparison. The framework earns credibility by making these tests possible.

A Common Measurement Standard

A reproducible release should identify the household unit, year, data vintage, weights, income components, taxes, residuals, service allocations, and essential-budget measure. Preserve the path from original observations to the published estimates, including

imputation and uncertainty methods. For each institution, publish consolidated assets and liabilities, returns, contributions, payouts, eligibility, governance evidence, and the household transmission rule.

CAR50 and PWR50 should mean the weighted medians of household ratios, with boundary cases disclosed. They are not ratios of median components or the ratios of the median-income household. Alongside percentiles, show participation, benefit amounts, essential-cost coverage, and differences by household type. Repeated estimates should explain changes caused by new resources separately from changes in classification or population.

Independent reconstruction is part of the standard. Release the definitions, source tables, classification decisions, and calculations needed to rebuild each result. Administrative reports should identify the reporting cutoff and distinguish a benefit year from the year money was paid. Household surveys should preserve their sampling and imputation structure. A reader should be able to move from a headline number back to the observations that support it, and to see which assumptions would change it.

The goal is a public account that connects productive wealth to ordinary life. Every stage should be visible: the asset, the claim, the payment or service, the household that receives it, and what it enables that household to afford. That is how an ownership target becomes something citizens can evaluate and institutions can be held responsible for delivering.

Notes

¹ Piketty, *Capital in the Twenty-First Century*, 52, <https://wid.world/document/piketty-thomas-2014-capital-21st-century-harvard-university-press-2014-introduction-chapter-1/>. Piketty's identity relates the capital-income share, rate of return, and capital-to-income ratio.

² The CAR and PWR definitions and their proposed targets are this book's own framework.

³ U.S. Bureau of Economic Analysis, *NIPA Handbook*, chap. 2, "Fundamental Concepts," 2-5–2-7, <https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-02.pdf>; chap. 10, 10-3–10-4 and 10-9, <https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-10.pdf>; and chap. 11, 11-1–11-2, <https://www.bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-11.pdf>. National-account income includes accruals and imputations that differ from household cash receipts. Holding gains are excluded from current income, and proprietors' income combines labor and capital returns. The appendix's cash crosswalk is an additional analytical convention.

⁴ European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and World Bank, *System of National Accounts 2008* (United Nations, 2009), paras. 8.20–8.33, <https://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf>. The distinction between disposable and adjusted disposable income supplies the accounting precedent for showing cash and in-kind benefits separately.

- ⁵ Kenneth J. Arrow, Hollis B. Chenery, Bagicha S. Minhas, and Robert M. Solow, “Capital-Labor Substitution and Economic Efficiency,” *Review of Economics and Statistics* 43, no. 3 (1961): 225–50, especially 230–31, <https://doi.org/10.2307/1927286>. The CES family permits different degrees of substitution between capital and labor; it does not by itself establish the employment effects of AI. A falling labor share and a falling wage bill are different outcomes.
- ⁶ Acemoglu and Restrepo, “Automation and New Tasks,” 3–8. Their task framework distinguishes automation’s displacement effect from productivity gains and the creation of new tasks.
- ⁷ Board of Governors of the Federal Reserve System, “2022 Survey of Consumer Finances,” public-use summary extract and documentation, accessed September 6, 2026, <https://www.federalreserve.gov/econres/scfindex.htm>; summary extract, <https://www.federalreserve.gov/econres/files/scfp2022excel.zip>. The annual income questions principally concern 2021; dollar amounts here are in 2022 dollars. SCF families are primary economic units. Interest and dividends are a narrow observed income stream, not all capital income or a complete CAR measure.
- ⁸ Author’s calculations from Board of Governors of the Federal Reserve System, “2022 Survey of Consumer Finances,” public-use summary extract, <https://www.federalreserve.gov/econres/files/scfp2022excel.zip>; extraction macro, <https://www.federalreserve.gov/econres/files/bulletin.macro.txt>; and 2022 codebook, <https://www.federalreserve.gov/econres/files/codebk2022.txt>. Estimates concern 2021 income in 2022 dollars. Each of five imputations is estimated separately using $5 \times \text{WGT}$, then the five point estimates are averaged. Quantiles use the weighted empirical distribution. These are point estimates without replicate-weight confidence intervals; the data do not separately identify qualifying inclusive-capital benefits. The narrow numerator is INTDIVINC; its aggregate share divides the weighted sum of INTDIVINC by the weighted sum of INCOME. The mixed-income sensitivity adds BUSSEFARMINC to the numerator.
- ⁹ Author’s calculations from Board of Governors of the Federal Reserve System, “2022 Survey of Consumer Finances,” public-use summary extract (2021 income in 2022 dollars). The mixed-income sensitivity assigns the published BUSSEFARMINC component to capital without claiming that all of it is passive income.
- ¹⁰ Author’s calculations from Board of Governors of the Federal Reserve System, “2022 Survey of Consumer Finances,” public-use summary extract (2021 income in 2022 dollars). The mixed-income sensitivity assigns the published BUSSEFARMINC component to capital without claiming that all of it is passive income.
- ¹¹ Alaska Department of Revenue, Permanent Fund Dividend Division, *Annual Report 2024*, 3–4 and 16–17; U.S. Bureau of Economic Analysis, “Gross Domestic Product by State and Personal Income by State, 4th Quarter 2024 and Preliminary 2024,” March 28, 2025, table 4, Alaska row, <https://www.bea.gov/sites/default/files/2025-03/stgdppi4q24-a2024.pdf>. The report distinguishes the \$1,403.83 base dividend from \$298.17 in energy relief. The appendix’s base-dividend total multiplies the base amount by 621,902 payments; it is a face-value approximation before allocation of adjustments, not measured net household receipts. The denominator is Alaska’s \$55.693 billion in 2024 aggregate personal income from BEA’s fixed preliminary vintage, which has since been superseded. Dividing the base-dividend face-value total by that denominator gives approximately 1.57 percent; this is a cash-program scale comparison, not household PWR.

- ¹² Norwegian Ministry of Finance, “Statsrekneskapen 2024” [State Accounts 2024], April 25, 2025, table 1, <https://www.regjeringen.no/no/aktuelt/statsrekneskapen-2024/id3098241/>. The 18.19 percent figure is the reported NOK 346.451 billion transfer divided by NOK 1,904.804 billion in nonpetroleum central-budget expenditure. It describes fiscal financing; household benefit incidence and a household-income denominator are not identified by these totals.
- ¹³ Norges Bank Investment Management, *Annual Report 2024*, 78–80, https://www.nbim.no/contentassets/490f9f062cfc4694b12c45f4d04ab0a5/annual_report_2024.pdf. The investment accounts distinguish net fund capital from annual cash flows. The treasury financing transfer is not a direct household dividend or evidence that an equivalent amount of securities was sold; the fund recorded a net government inflow in 2024.
- ¹⁴ Jones and Marinescu, “Labor Market Impacts.” The study estimates no aggregate employment reduction and increased part-time work associated with Alaska’s dividend.
- ¹⁵ Akee et al., “Parents’ Incomes and Children’s Outcomes.” The study examines household income gains from casino-profit payments and subsequent child outcomes. It does not isolate an ownership effect from the effect of receiving additional income.

Full Citations for Shortened Notes

Piketty, Thomas. *Capital in the Twenty-First Century*. Translated by Arthur Goldhammer. Belknap Press of Harvard University Press, 2014. <https://www.hup.harvard.edu/books/9780674430006>.

Acemoglu, Daron, and Pascual Restrepo. “Automation and New Tasks: How Technology Displaces and Reinstates Labor.” *Journal of Economic Perspectives* 33, no. 2 (2019): 3–30. <https://doi.org/10.1257/jep.33.2.3>.

Jones, Damon, and Ioana Marinescu. “The Labor Market Impacts of Universal and Permanent Cash Transfers: Evidence from the Alaska Permanent Fund.” *American Economic Journal: Economic Policy* 14, no. 2 (2022): 315–40. <https://doi.org/10.1257/pol.20190299>.

Akee, Randall K. Q., William E. Copeland, Gordon Keeler, Adrian Angold, and E. Jane Costello. “Parents’ Incomes and Children’s Outcomes: A Quasi-Experiment Using Transfer Payments from Casino Profits.” *American Economic Journal: Applied Economics* 2, no. 1 (January 2010): 86–115. <https://doi.org/10.1257/app.2.1.86>.