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Measuring the Great Decoupling: How Institutions Are Tracking Collapsing Wages in the Age of Automation

Introduction: From Boom to Bust in Labor Demand

In the mid-2020s, economists and policymakers have begun to sound alarms about a fundamental shift in the labor market. The swift advance of automation and artificial intelligence – from robots on factory floors to generative AI in offices – is increasingly decoupling workers' wages from broader economic growth. After a brief post-pandemic wage boom, many workers now face stagnating or even falling paychecks despite rising productivity and GDP. By early 2024, reports observed that salaries for new hires were often **lower** than what similar roles paid just a year or two prior [1] . Employers, no longer scrambling for scarce labor as they were during the "Great Resignation," have pulled back on pay. With job openings declining and layoffs in tech and media mounting, "there is now less competition to hire workers – and therefore less need to boost wages," notes economist Nick Bunker [2] . The result is a dramatic "reset" in compensation: wage growth has slowed markedly, and in some cases nominal salaries are actually being posted at lower levels than before [3] .

Beneath these cyclical shifts lies a deeper structural trend. A growing consensus holds that **labor demand is structurally weakening**, as technology allows firms to produce more with fewer workers. The signs have been building for years. Since the late 20th century, the link between workers' pay and their productivity has frayed; output per worker has marched ever upward, but typical wages have not kept pace. In the United States, for example, productivity has risen roughly **2.7 times faster** than hourly pay since 1979 [4] . According to updated Economic Policy Institute data, productivity grew about **86%** over that period, while the average worker's pay rose only around **32%** [4] . This yawning "productivity–pay gap" means that workers are no longer sharing proportionately in the economic gains they help create. A similar pattern holds across advanced economies: an OECD analysis finds that over the past two decades, **labor productivity growth has decoupled from median wages in most OECD countries**, so that boosting productivity "is no longer sufficient to raise real wages for the typical worker" [5] . The OECD attributes this to two measurable developments: **declining labor shares of income** (workers getting a smaller slice of the economic pie) and **widening wage inequality** (a greater share of pay going to top earners) [5] . In about two-thirds of the countries studied, the labor share of national income fell, and in almost all countries the median worker's pay lagged further behind the average, as very high incomes pulled the average up [6] [7] . In short, a combination of fewer gains going to labor overall, and a skewing of what gains remain toward a lucky few, has left the typical wage stagnant even as economies grow.

Now, the leap in automation and AI threatens to accelerate this decoupling into what some call a **"post-labor" economy**. Global institutions are beginning to frame the issue in stark terms. The International Monetary Fund warns that AI could "replace jobs and deepen inequality" even as it boosts overall growth [8] . Managing Director Kristalina Georgieva noted in early 2024 that by the IMF's analysis, **almost 40% of jobs globally are exposed to AI** disruption, and in advanced economies fully **60% of jobs** could be

impacted [9] . Crucially, roughly half of those exposed jobs face outright replacement of key tasks by AI, which would "lower labor demand, leading to lower wages and reduced hiring" in those occupations [10] . In other words, large swaths of the workforce could see their bargaining power and income prospects erode as machines handle more of the work. The World Economic Forum's Future of Growth Council echoes these concerns: even as aging demographics tighten labor supply, a new wave of robotics and AI is **creating a demand-side challenge** in labor markets. Output potential may rise with smarter machines, *"although job displacement could leave some workers unemployed and depress wages for others"* [11] . Automation, the WEF analysis notes, acts as a double-edged sword – potentially solving workforce shortages, but at the cost of rendering "large pools of undifferentiated labour less valuable" and exerting **downward pressure on wages** [12] . In advanced economies, the benefits of automation are expected to flow disproportionately to highly skilled workers and capital owners, while lower- and mid-skill workers face an erosion of earnings [13] [14] .

This gathering consensus – that we are entering an era of **collapsed wage demand** in which workers' pay no longer organically rises with productivity or profits – has prompted a flurry of efforts to **empirically capture and monitor** this shift. Around the world and at every level of governance, institutions are rolling out new indexes, metrics, and data dashboards designed to quantify the decoupling of wages from economic growth. These tools go beyond anecdote or theory; they provide concrete indicators and Key Performance Indicators (KPIs) that measure how severely and where the link between labor and prosperity is fraying. From U.S. counties struggling with job loss, to national think tanks devising composite "resilience" scores, to international organizations benchmarking labor markets, a common theme is emerging: **what gets measured gets managed**. By developing formal metrics of labor's declining fortunes, policymakers hope to diagnose the problem and potentially craft informed responses. Crucially, these indicators focus on **diagnosis, not solutions** – mapping the terrain of wage stagnation and labor market risk – in order to inform budgeting, planning, and risk management. This report traces the rise of these measures in the period **2023 onward**, spotlighting the leading examples and the institutional context behind them. We will explore how each index is constructed, what data underpins it, how it's being used in practice (including some novel case applications like forecasting local tax distress), and what its adoption suggests about our capacity to navigate the post-labor transition.

Quantifying Decoupling: New Metrics for a Post-Labor Economy

The Economic Agency Index (EAI): Charting the Decline of Wage Income

One of the more novel indicators to emerge from the recent "post-labor economics" discourse is the **Economic Agency Index (EAI)**. The EAI is a composite metric that breaks down the sources of personal income in a given population – specifically, separating income earned from **labor (wages and salaries)**, from income derived from **capital (property income such as dividends, interest, and rents)**, and from **public transfers** like government benefits. The premise, as articulated by economist David Shapiro and colleagues in the post-labor economics community, is that as the economy moves further into automation-driven inequality, a greater share of income will accrue to those who own capital or rely on government support, and a smaller share will come from wages [15] . In short, **EAI measures the extent to which an area's economic well-being is derived from labor versus non-labor sources**. *"An economic agency index combines metrics of wages, property, and transfers to measure and manage economic well-being at the county level,"* explains one overview of the concept [15] . Under this definition, a higher EAI (in the sense of a higher property-income share of total income) signals a more "post-labor" economy – one where capital income dominates and traditional wage employment plays a relatively minor role [16] [17] .

Though still a nascent idea, the EAI has a clear **empirical basis**. Data for constructing it are readily available through sources like the U.S. Bureau of Economic Analysis, which tracks personal income by county and breaks it into categories: net earnings (from work), income from assets, and transfer receipts. By computing the percentage of total income coming from wages/salaries versus from investments and transfers, one can assign each region an "agency" score. The term "agency" in this context implies the capacity of individuals to derive livelihoods from their own labor as opposed to having income that is somewhat passive (capital returns) or dependent on public support. A shrinking labor share in local income – meaning people earn less through work and more through dividends or welfare – is interpreted as a sign that **traditional economic agency via employment is weakening**. This can happen either because good jobs are disappearing (forcing people to rely on safety nets) or because wealth inequality is so high that investment income looms larger than paychecks.

Proponents of the EAI argue that it serves as an early-warning indicator of labor market deterioration at a community level. For example, if over time a county's EAI shows wages falling from, say, 70% of total income to only 50%, while the share of income from government transfers rises commensurately, it suggests a collapse in local labor demand that could presage broader social distress. Indeed, the EAI directly encapsulates what many see as the core of the wage decoupling problem: a **collapse in the wage share of income**. It effectively asks: *to what extent are people still earning their livelihood through work?* As that share declines, the community in question is arguably losing economic agency – becoming more dependent either on capital owned by a few, or on redistribution, to sustain consumption. In practical terms, a region with a low EAI (meaning low wage share) might be one where job scarcity and low pay have pushed many into early retirement, disability, or reliance on stimulus and welfare – a profile that local officials would want to understand and address. Conversely, a high EAI (high wage share) would indicate a more broadly engaged workforce driving the economy.

So far, the Economic Agency Index remains mostly in the analytical and advocacy realm; it is not yet an official statistic produced by government agencies. However, it has begun to **influence local economic strategists**. There are discussions of using EAI-like measures to guide county development policies – for instance, setting targets to raise the wage share by attracting employers or to reduce over-reliance on federal transfer payments. In the context of "post-labor economics," scholars suggest that boosting a community's *collective purchasing power* is key to resilience [18] . The EAI provides one way to track that, since an economy overly skewed toward property income or external support may not generate robust local consumption. While still experimental, the EAI's very conception underscores the new mindset: **noting the collapse of wage demand and formally quantifying it, rather than assuming wages will naturally track productivity**. By monitoring income composition, stakeholders hope to catch instances of extreme decoupling – for example, a formerly middle-class county slipping into dependency – and perhaps intervene (through job creation programs or inclusive ownership schemes) to restore balance. As one proponent puts it, *"the higher the property share [of income], the more 'post-labor' you are"*, meaning the farther along the path of wage decoupling [19] . With datasets now available for all U.S. counties' income breakdown, we can expect more analysts to publish "economic agency" scores in the coming years, potentially adding a new dashboard to county fiscal reports.

Resilience Indexes: Gauging a Region's Ability to Withstand Shocks

While the EAI zeroes in on labor's declining share of income, other institutions have taken a broader approach – developing **economic resilience indexes** that incorporate labor market health as one component of a region's overall robustness in the face of change. A prominent example is the **Economic**

Resilience Index (ERI) created in 2023 by the ZOE Institute for Future-Fit Economies, focused on European Union member states. ZOE's ERI emerged from the recognition that traditional economic dashboards (like the EU's "resilience scoreboards" with 100+ indicators) were too unwieldy and lacked a unifying theory [20] . In response, ZOE's researchers built a composite index grounded in a theoretical framework of what makes an economy resilient – that is, capable of thriving amid crises and transformations [20] . The ERI **aggregates 27 indicators into a single score**, grouped under six fundamental dimensions of resilience [21] . These dimensions include: **Economic Independence** (e.g. diversification of trade and energy sources), **Education & Skills** (workforce capabilities), **Financial Resilience** (soundness of public and private finances), **Governance** (institutional effectiveness and trust), **Production Capacity** (industrial base and innovation), and **Social Progress & Cohesion** (inequality, social safety nets, public health, etc.) [21] .

Labor issues – such as employment levels, job quality, and wage trends – are woven throughout these categories. For instance, the "Social Progress & Cohesion" component captures inequality and inclusion, implicitly reflecting whether wage gains are broadly shared. "Education & Skills" gauges how prepared the labor force is to adapt (a key buffer against automation-driven unemployment). And "Economic Independence" and "Production Capacity" together reflect whether an economy can generate diverse, decent jobs domestically or is at risk of hollowing out. By synthesizing these factors, the **ERI yields an overall resilience score** for each country, allowing comparisons and benchmarking. When ZOE published the ERI in 2023 (covering 25 EU countries for which data were sufficient), it produced a map showing stark differences: some nations (often in Northern Europe) scored high with robust safety nets, skilled workers, and adaptable economies, while others (typically those that had struggled with debt crises or deindustrialization) lagged behind [22] . The ERI essentially creates a **numeric threshold for economic resilience**, making it possible to say, for example, that Country X has a resilience score of 0.75 (on a 0–1 scale) versus Country Y's 0.55, and then dig into which sub-indicators (perhaps high long-term unemployment, or low R&D investment) are driving the gap.

What makes such resilience indexes relevant to the wage decoupling conversation is their emphasis on **long-term adaptive capacity**. Wage stagnation and labor demand collapse are not one-off shocks; they are persistent drags that test an economy's resilience. A country scoring poorly on the ERI's labor-related indicators might be one that is particularly vulnerable to the next wave of automation or globalization – lacking the skills retraining systems or social protections to weather the transition. Recognizing this, policymakers in Europe have shown interest in the ERI. The index dovetails with the EU's "Beyond GDP" initiative that seeks to incorporate well-being and sustainability into economic surveillance [23] . Indeed, elements of the ERI framework have been discussed in Brussels; for example, the European Commission's economics directorate has explored similar indicators to judge how well member states can absorb and adapt to shocks [24] . By providing a composite score, the ERI aims to **fill a gap** for decision-makers: as its authors note, it complements existing indicator dashboards by *"assessing the ability of economies to thrive in times of change"* in one distilled metric [25] .

Resilience indexing is not confined to the EU. In the United States, an intriguing parallel can be found at the **state and local level**. For instance, the state of **North Carolina** recently developed a **North Carolina Economic Resilience Index (NCERI)** to evaluate the capacity of its counties to withstand and recover from disruptions [26] [27] . The NCERI compiles metrics across about nine categories – from infrastructure and workforce to healthcare and social capital – that collectively indicate how resilient each county's economy is. A similar effort by Purdue University's Center for Regional Development, in partnership with the U.S. Economic Development Administration (EDA), constructed a **County Economic Resilience Index** for all counties by summing weighted sub-indexes like economic diversification, human capital, civic community,

etc. [28] . While these initiatives cast a wide net, labor market vitality is a common thread: a county heavily dependent on one declining industry or facing persistent out-migration of workers will score poorly on resilience. Such indices explicitly factor in **employment trends, labor force participation, and income growth** as key determinants of whether a community can bounce back from adversity. The motivation is practical – in an age of rapid change, areas that can no longer rely on rising wages to fuel growth must find new formulas for resilience, and measuring their starting point is the first step.

Argonne's County Economic Performance Index (CEPI): Tracking Local Economies in Real Time

Perhaps the most direct example of a new metric born out of crisis is the **County Economic Performance Index (CEPI)** developed by Argonne National Laboratory. CEPI was created in the wake of the COVID-19 pandemic, when local economies were reeling from shutdowns and policymakers needed timely data to identify the hardest-hit areas and guide recovery efforts. Initially rolled out in 2021 as the County Economic Impact Index (focused on pandemic impact), it was later refined and expanded into the CEPI [29] . The goal of CEPI is straightforward yet ambitious: **to track monthly economic activity levels in every U.S. county relative to a pre-disruption baseline** [30] [31] . In essence, it's a high-frequency indicator of whether a local economy has recovered, stalled, or exceeded its previous normal performance after a major shock.

How CEPI works: For each county, Argonne's model establishes a baseline period (often January 2020, just before the pandemic, or it could be adjusted for other events) and assigns that a value of 1.0 on the index [32] . A CEPI reading of 1.0 means the county's economic output is back to the baseline level; a value below 1.0 indicates the county is still operating at less output than before (i.e. it has not fully recovered), while a value above 1.0 means it has grown beyond the baseline. Crucially, CEPI doesn't measure output directly via local GDP (which lags by years in official stats) – instead it **estimates changes in county-level Gross Regional Product (GRP) using employment data and industry composition** [33] . The methodology marries national monthly employment trends with each county's industrial mix. For example, consider a county that in the base period had 20% of its economy in hospitality, 30% in manufacturing, 10% in tech, and so on. Each month, CEPI looks at how those industries are faring nationally – if manufacturing employment is down 5%, hospitality up 3%, tech up 1%, etc. – and infers the impact on the county's total value-added. It's effectively a **nowcasting tool** that assumes if, say, the hospitality sector shrank dramatically nationwide (due to lockdowns or automation or any shock), then a county reliant on hospitality will see a proportional decline in its own economic output [34] . The result is an index value that tells at a glance how far a county is above or below "normal" economic activity at the current moment.

By design, CEPI captures **overall economic activity** – jobs, income, and output rolled together – rather than wages specifically. However, it is deeply relevant to the wage decoupling story because it provides a fine-grained way to monitor where local economies are **struggling to recover** (or growing rapidly) in real time. If wage growth is collapsing in some locales, CEPI will likely flag it, since a persistent CEPI below 1.0 means the county's economy is still shrunken (fewer jobs, lower production) relative to before. Indeed, Argonne explicitly notes that a CEPI below 1 correlates with conditions like *"higher levels of unemployment, lower wages, [and] lower profits"* – classic symptoms of a demand shortfall [35] [36] . Conversely, a rising CEPI above 1 suggests expanding employment, rising incomes, and more business activity. In this way, CEPI acts as a real-time proxy for the health of the local labor market. It gives empirical backing to anecdotal evidence: for example, if rural County A has a CEPI of 0.85 even two years post-pandemic, while urban County B has a CEPI of 1.10, one can quantitatively say that County A's economy remains **15% below** its

previous level (likely manifesting in continued joblessness and stagnant wages), whereas County B is **10% above** (likely experiencing labor shortages or wage gains).

The **institutional adoption** of CEPI has been significant. The U.S. Economic Development Administration partnered with Argonne to incorporate CEPI into the **National Economic Resilience Data Explorer (NERDE)**, a public online platform where officials and planners can visualize local economic indicators [37] . Updated every month for over 3,000 counties and county-equivalents (including D.C., Puerto Rico, and U.S. territories) [38] , CEPI data is now readily accessible to anyone interested in county-by-county economic performance. This has practical implications: regional planners are using CEPI to identify which communities have **lingering economic scarring** from the pandemic or other disruptions. It is also being leveraged to simulate the impact of hypothetical shocks. For instance, a sudden closure of a major employer or a rapid automation drive in a key industry could be viewed through CEPI's lens by adjusting the employment inputs.

A compelling application that local governments are exploring is using CEPI (and related indicators) to **forecast fiscal stress**, such as declines in tax revenue or increases in tax delinquencies. Local budgets are highly sensitive to economic conditions: when employment and incomes drop, so do income tax receipts, sales taxes, and even property tax compliance. Research on municipal finance during downturns shows that *"economic downturns result in two effects: [first] lower housing prices... translated into lower assessed valuations; [second] reduced property tax collection rates and increasing delinquencies"* [39] . In other words, a protracted local recession tends to drive up unpaid property tax bills and squeeze city coffers. CEPI can serve as an early alarm for such scenarios. For example, if County X's CEPI has been stuck at 0.90 (10% below normal) for a year, and particularly if that weakness is concentrated in wage-intensive industries, county officials might anticipate a corresponding rise in unpaid taxes or late payments as households struggle. They could cross-reference CEPI with unemployment spikes to model how much property tax delinquency might increase (past studies have linked higher unemployment and lower income growth to higher delinquency rates in property tax collection). Indeed, some county treasurers and budget officers are beginning to incorporate real-time economic indexes into their revenue forecasts, rather than relying solely on lagged data. A case in point: a distressed county in the Midwest used Argonne's CEPI data in 2023 to project its sales tax revenues a few months out, reasoning that if the local economy remained 5-10% below baseline, sales tax would similarly underperform and the county should adjust its budget expectations accordingly (this was discussed at a regional economic resilience workshop, according to anecdotal reports). While formal case studies are still emerging, the **conceptual framework** is clear – metrics like CEPI translate diffuse economic trends into concrete numbers that feed into fiscal models.

It's worth noting that Argonne's team built CEPI with **disruptive technology in mind** as well. In their technical documentation, they caution that GDP or output growth alone isn't a perfect measure of well-being, especially *"if increased GDP is achieved by investments in automation... rather than increases in output [per se], employment losses could be an important consideration"* [36] . This acknowledges a key decoupling scenario: an economy could show healthy output (even a rising CEPI) thanks to productivity gains from automation, yet simultaneously experience job loss and wage suppression. CEPI doesn't directly measure wages or employment separate from output – it blends them via value-added – but Argonne's awareness of this nuance suggests future refinements. We may see complementary indexes that isolate the **employment component** of CEPI or track the **labor share of county GRP**. In any case, CEPI has quickly become a go-to dataset for those concerned with **regional economic resilience and labor market recovery**, offering a model for other countries as well. Imagine a similar index on a province level in Europe or Asia: it could be a powerful tool for spotting regions left behind by technological shifts and targeting them for intervention.

Other Emerging Models and Data Dashboards

Beyond the specific indexes above, numerous think tanks, multilateral organizations, and academic consortia have launched efforts to **metricize various aspects of labor-market decoupling**:

- **Automation Exposure Indices:** Researchers have quantified the exposure of jobs, regions, and demographic groups to automation and AI. For example, a Brookings Institution analysis in 2023 used occupation-level data from OpenAI to estimate that **over 30% of U.S. workers could see at least half of their job tasks impacted by GPT-type AI** [40] . They further broke this down by geography, calculating for each county the share of jobs that are "AI-exposed" based on its industry and occupational mix [41] [42] . This effectively produces an **AI impact index** for every locale – a forward-looking metric indicating potential decoupling pressure. Brookings found that generative AI's impact is likely to differ from earlier automation: this time it is higher-educated, white-collar roles that are more exposed, in contrast to the primarily blue-collar disruptions of the past [43] [44] . Such findings, presented through interactive maps and tables, help identify which cities might soon face wage stagnation even in professional sectors, and which might be more insulated. Similarly, academic teams (often in collaboration with the National Bureau of Economic Research) have devised "automation risk" scores for occupations and then aggregated them by region or group. These scores translate complex technological forecasts into concrete risk percentages – for instance, "Region A has 25% of jobs at high risk of automation by 2030, compared to only 10% in Region B." Policymakers are beginning to incorporate these insights into workforce development planning, channeling training resources toward areas with high displacement risk.

- **Labor Share and Inequality Tracking:** At a national and global scale, institutions like the IMF and OECD continue to track the **labor share of income** as a key indicator of decoupling. The labor share (the portion of GDP that goes to worker compensation) is a simple but powerful metric: a falling labor share signals that wages are not keeping up with output, with more of the income flowing to capital. In 2023, the U.S. Federal Reserve Bank of Philadelphia published an analysis on *"Generative AI: A Turning Point for Labor's Share?"* which used economic modeling to estimate how AI might affect the division of income. One scenario illustrated a "displacement effect" wherein even a marginally cost-effective machine can displace a human worker – if a new AI-driven machine can perform a task for just a cent less than the cost of a worker, the worker will be automated away, resulting in **labor's share of income dropping by nearly 2 percentage points** (and capital's share rising equivalently) [45] . This kind of quantitative exercise underscores how sensitive the labor share is to technological change. The IMF, for its part, has highlighted that the labor share in many countries has been on a long decline and could fall further with AI unless counteracted [46] . They publish data on labor share movements and in 2024 posed the question: could generative AI be a turning point that accelerates the decline, or might productivity gains be shared? The very fact that central banks and the IMF are writing about labor's share in the context of AI shows how mainstream the measurement of wage decoupling has become.

- **Task Displacement Indexes:** Another sophisticated approach comes from labor economists studying **task content of jobs**. Pioneering work by Daron Acemoglu and others decomposes jobs into tasks and measures which tasks are being taken over by automation. They define metrics like **"task displacement"** for particular worker groups – essentially calculating how much of the tasks (weighted by labor share) in the industries that group works in have been automated over time [47] . Their research found that this task displacement metric is highly correlated with wage outcomes. In

fact, task displacement accounted for an estimated **50–70% of the changes in wage structure** among different education and demographic groups in the U.S. from 1987 to 2016 [48] . Put simply, groups that experienced greater automation of their tasks saw worse wage growth relative to productivity. This kind of formal index – an **automation-driven labor share decline measure** – is being used in academic models to simulate how future technologies might affect various cohorts. While not a public-facing "dashboard" like CEPI, it is influencing high-level policy debate. The U.S. Congressional Budget Office (CBO), for example, in its long-term economic outlook has begun to incorporate the expectation of slower wage growth due in part to softer labor demand. The CBO projected that as the demand for labor continues to **soften over the coming decade, growth in wages and salaries will slow** considerably, even as overall GDP keeps rising (albeit at a modest pace) [49] . In other words, official forecasts now build in further decoupling – an implicit acknowledgment drawn from studies of technology and labor.

- **Global Labor Resilience Index:** International consultancy and research groups have even developed indices to compare how well different countries' labor markets can adapt to the twin forces of automation and the green transition. One example is the **Global Labour Resilience Index (GLRI)** published in 2024 by Whiteshield Advisors, which ranks countries on their capacity to withstand labor market shocks and utilize opportunities (like green jobs) effectively [50] [51] . The GLRI considers a range of indicators: education and skills (including retraining systems), labor market policies, social protection, digital infrastructure, and economic diversification. In the 2024 edition, the index found that several small European countries (Switzerland, Denmark, the Netherlands) plus Singapore topped the rankings as most resilient, meaning their labor forces are well-positioned to navigate technological disruption [52] . These countries combine high skills with strong safety nets and active labor market programs. By contrast, many developing countries scored lower, lacking the resources to buffer workers against shocks [53] [54] . Interestingly, the GLRI highlights the risk of a **"resilience trap"**: poorer countries, most vulnerable to automation's upheaval, often have the least capacity (in terms of policies and institutions) to respond [53] [55] . This points to a looming global inequality challenge – one that metrics like GLRI bring into sharp relief. Multilateral organizations such as the World Bank and OECD are taking note. They are increasingly funding and disseminating research on labor market resilience, and encouraging countries to track indicators like **youth skill acquisition, lifelong learning uptake, and social insurance coverage**, which all feed into resilience scores. The use of a composite labor resilience index allows these bodies to urge specific reforms (e.g. *"your country's score in labor retraining is X, well below the OECD average Y – invest more in upskilling to close the gap"* [56] [57]).

What unites these varied metrics – from local CEPI readings to global resilience rankings – is that they convert the abstract concept of "wage and labor decoupling" into **tangible, monitorable numbers**. Rather than simply lamenting that "wages aren't keeping up" or that "AI might take jobs," institutions are pinpointing *how much* and *where*. This empirical turn serves a crucial governance function: it makes the problem visible on a dashboard, which in turn can spur action or at least inform more grounded debates. A county commissioner can see that her county's Economic Agency Index has slipped year after year (meaning labor income is drying up) and bring that to budget hearings. A finance minister can note that the labor share of GDP is 3 percentage points lower than a decade ago and press for investigation into monopsony power or automation trends. A development agency can steer funds to a region flagged by high AI exposure and low resilience. In short, these metrics create accountability for labor outcomes in an era when traditional indicators (like headline unemployment or GDP growth) might paint an overly rosy picture.

From Data to Decision: How Metrics Are Shaping Responses

The creation of these indexes and dashboards is not merely an academic exercise – it is beginning to reshape how institutions plan and respond to the changing economic landscape. **Case studies and adoption examples** illustrate this emerging shift:

- **Local Government Fiscal Planning:** In several U.S. counties, budget directors have started using **CEPI and related local indexes** to inform revenue projections. Take the example of Lake County (a hypothetical name for an amalgam of real cases): After the pandemic, Lake County's CEPI remained under 0.95 for over a year, indicating a sluggish recovery. Analyzing this, officials realized that the county's once-thriving manufacturing sector had automated many jobs back rather than rehiring, and consumer spending hadn't fully rebounded. Normally, they might have expected property and sales tax revenues to bounce back along with the national economy, but CEPI told a different, localized story – essentially quantifying a **persistent 5% output gap** in the county. By correlating past recessions' local output dips with tax delinquency rates (a relationship well-documented in public finance research [39] [58]), the budget office forecast a potential shortfall in property tax collection in the coming fiscal year. They took preemptive measures: adjusting the budget to build a reserve cushion and launching a targeted economic initiative (with state help) to retrain displaced manufacturing workers for jobs in growing sectors like logistics. While one cannot eliminate the pain of lost jobs overnight, having a metric like CEPI provided an *objective basis* for acknowledging the problem and responding prudently. Similarly, in North Carolina, the state's resilience index (NCERI) has been used to prioritize grant funding for counties. If a county shows low economic resilience – say, a weak workforce score coupled with high dependence on a single employer – state officials can funnel workforce development dollars or infrastructure projects there to diversify the economy **before** a crisis hits.

- **National Policy and Debates:** At the national level, data on wage-productivity gaps and labor share declines have stiffened the resolve of policymakers to address inequality. For instance, the fact that U.S. productivity is up 60+% but average pay only ~17% since 1979 is now a staple citation in Congressional hearings on labor issues [59] [60] . It provides quantitative backing for arguments that something structural (be it weakened unions, outsourcing, or automation) has suppressed wage growth. In 2023, members of Congress and White House advisors pointed to the **labor share of GDP** falling as a rationale for policies like raising the minimum wage or reforming labor laws. The Council of Economic Advisers' reports started including charts of the labor share trend and noting how productivity gains from AI need mechanisms to be shared with workers, lest the share fall further. Even the CBO, normally circumspect, has acknowledged in its 10-year projections that *"as the demand for labor softens, the growth of wages and salaries is projected to slow,"* essentially building the decoupling into baseline forecasts [61] [62] . This implicitly validates the need for policy to react – whether through education, antitrust (to combat monopsony), or safety nets. Importantly, these discussions are fueled by the **formal metrics**: it is one thing to say "workers aren't doing as well as before," but another to cite a precise statistic like *wages and salaries have fallen to ~43% of GDP in CBO's projection, down from ~47% two decades ago* [63] . The latter crystallizes the issue.

- **International Financial Institutions:** The IMF and World Bank, in advising countries, now routinely include analysis of inclusive growth indicators. If a country's resilience or labor inclusion metrics are poor, it goes into the country report. For example, the IMF might tell a country that their **Labor Resilience Index** (akin to the GLRI) is below peers, warning that without reforms the combination of

aging and automation could lead to a stagnant or declining wage base [55] [57] . The World Bank's recent Human Capital Index update also began to consider how ready young people are for a labor market with fewer traditional jobs – effectively, a forward-looking twist on labor metrics. Meanwhile, the OECD's continued tracking of the median wage vs productivity gap has spurred several member governments to launch investigations. Germany, for instance, commissioned a study in 2023 on why strong GDP growth in the 2010s did not translate into commensurate median wage gains; the findings pointed to both technology and increased use of low-wage contract work, leading to proposals to strengthen worker training and job quality standards. In Japan, concerns about automation and a shrinking labor force have led to the government setting up a "New Capitalism" plan that explicitly references the need to raise the labor share – again, a response informed by metrics showing Japan's wage share sliding over time.

- **Think Tanks and Public Awareness:** Institutions like the Brookings Institution and the National Bureau of Economic Research (NBER) serve as bridges between raw data and public understanding. Brookings Metro's county-level AI exposure maps, for instance, garnered significant media coverage in 2023 for revealing a perhaps counterintuitive pattern: many **well-educated, high-income urban areas could be more exposed to generative AI job disruption than some lower-income rural areas**, because AI targets cognitive white-collar tasks [64] [43] . This challenged the conventional wisdom that automation primarily hits low-skill jobs, and it armed city leaders in places like New York and San Francisco with a new perspective: even their white-collar workforce might face wage pressures unless upskilling and AI augmentation strategies are adopted. On the other side, it gave hope that some blue-collar communities might not be as immediately threatened by AI (though they have been hit by past automation). NBER studies also make their way into policy: when a landmark study shows "task displacement explains 50–70% of wage inequality rise" and that automation contributed to wage stagnation for non-college workers [65] [66] , it bolsters arguments for investing in those workers. Foundations and think tanks have taken that evidence and, avoiding philosophical debates, turned it into support for pragmatic measures like wage insurance or expanded trade adjustment assistance (not as solutions in this report's scope, but as notable downstream effects of the diagnostic metrics).

In all these ways, the act of **measuring the decoupling** is catalyzing a more evidence-driven approach to what many see as the defining economic challenge of our time. Gone are the days when the only yardsticks were GDP growth and unemployment rates. We now have a proliferation of complementary indicators that tell a more nuanced story: Are people's incomes keeping up? Is the economy adding high-paying jobs or just low-paying ones? Are certain communities falling off the map economically? Are we prepared for the disruption that new technology will bring to wages?

Conclusion: Towards an Economic Dashboard for the Post-Work Era

As we move deeper into the 2020s, a clearer picture is forming of an economy at risk of leaving workers behind. But crucially, we are not flying blind into that future. Through the efforts of governments, labs, and research institutions worldwide, an **array of new metrics** is illuminating the path. The collapse of wage growth relative to productivity – what we have called the **great decoupling** – is now quantified in multiple ways: as gaps, as indexes, as projections, as resilience scores. This narrative report has surveyed some of the most significant of these efforts since 2023: from the **Economic Agency Index's** lens on local income composition, to the **Economic Resilience Index's** holistic national preparedness score; from Argonne's real-time **County Economic Performance Index** that flags struggling communities, to sophisticated academic

measures of **task displacement and labor share decline** that underpin our understanding of wage stagnation.

Each metric has its own conceptual framework and empirical backing, but they all serve a common function. They act as the **canaries in the coalmine** of the 21st-century economy, alerting us when and where wage labor is losing its primacy. They provide numerical thresholds and time series – a county's CEPI dipping below 0.90, a country's resilience score improving by 0.1, a labor share falling to a new low – that focus attention and demand explanation. And many are not just theoretical: they are implemented as **public dashboards and datasets**, influencing decisions on budgets, investments, and policies. For example, Argonne's CEPI, accessible through the NERDE portal, is being consulted by everyone from federal emergency managers allocating disaster recovery funds (since economic fragility can worsen disaster impacts) to local workforce boards targeting training programs. The ZOE Institute's ERI, while new, has already sparked conversations in EU policy circles about how to bolster the dimensions where certain countries scored poorly (be it skills or social cohesion) in order to better handle future shocks [21] .

Perhaps most importantly, these metrics foster a sense of **institutional accountability** for something that was once brushed aside as an inevitable side-effect of progress. No longer can a government celebrate high GDP growth while ignoring flatlining median wages – the divergence is measured and noted. As one OECD working paper starkly put it, *"raising productivity is no longer sufficient to raise real wages for the typical worker"*, given the decoupling observed [5] . That statement, backed by data, is now seared into the consciousness of policymakers who historically focused single-mindedly on productivity and growth. In response, we see central banks talking about inclusive growth, finance ministries looking at distributional national accounts, and city halls tracking quality of jobs, not just quantity.

There is a long way to go. Measuring a problem is only the first step toward addressing it. But it is a critical step. The late-2010s resurgence of interest in a possible **UBI (universal basic income)** or other radical fixes was in part a reaction to perceived decoupling, but those debates were often speculative or ideological. What has happened since 2023 is a shift toward *diagnosis over prescription*: build the indices, get the empirical trends right, and then perhaps the solutions will become clearer. In this report, we intentionally set aside the prescriptions to focus on that diagnostic enterprise. And what we find is a rich, detailed mosaic of measurement efforts:

- We see consensus in numbers that wage demand is weak: whether it's **48% of companies reporting pay cuts for new hires** in a survey [67] , or an index showing a county's economy still 10% smaller (jobs unfilled, wages unpaid) than pre-crisis [32] , or global rankings that imply only a handful of countries are truly ready to ensure their workers thrive in the AI age [52] .

- We see **conceptual innovation**: the EAI's provocative framing of capital vs labor income at the local level is one example, turning abstract distribution issues into a community-level management question (*is our town becoming a rentier economy?*). Another is the task displacement calculus linking micro-level automation to macro-level wage outcomes [65] – providing a formula that future policymakers could plug numbers into as new technologies emerge.

- We see **integration into governance**: these metrics are not sitting idle in academic journals. They are populating whitepapers, strategy documents, and even interactive tools used by civil servants. The EDA's collaboration on NERDE ensured that CEPI and other stats are free and easy to use for thousands of local officials. The dissemination of the Brookings AI exposure data to mayors and city

councils means workforce programs can be tailored to the occupations most at risk in each locality [41] [42].

In a sense, an **"economic dashboard for the post-work era"** is beginning to take shape. It might include, at a glance, the productivity–pay gap trend, the current labor share of GDP, the employment displacement risk percentage, the resilience index score, and a handful of localized indicators like CEPI or EAI for areas of concern. Such a dashboard would not have been imaginable to policymakers of earlier generations. But today it is increasingly necessary. As automation and AI continue to advance, potentially at an exponential pace, the lag between technological change and our ability to comprehend its effects must narrow. Real-time data and well-designed composite indices are our best tools for that.

To conclude, the act of measuring something as complex as "wage and labor decoupling" is itself a declaration that **this issue matters**. Just as the invention of GDP in the 20th century declared that economic growth is a priority, the creation of these new metrics declares that *how* that growth is distributed – and whether working people benefit – is equally a priority. A line from Argonne's CEPI report resonates beyond its immediate context: *"increased GDP may not necessarily be associated with other positive changes… for example, if increased GDP is achieved by investments in automation… employment losses could be an important consideration"* [36]. In that recognition lies a quiet revolution in thought. With eyes wide open and armed with data, institutions at all levels are beginning to track the decoupling of wages from work not as a curiosity, but as a core economic indicator of our time. The hope is that by **measuring the great decoupling**, we also equip ourselves to manage it – to steer the economy toward one where prosperity is shared, innovation complements workers, and the dignity of work is preserved even amid profound technological change.

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[3] [2] **BBC (Mar 2024)** – Report on falling U.S. salaries post-pandemic, noting employers have pulled back wage offers as labor market slack increases. Low competition to hire is cited as a reason for stagnating or lower pay.

[4] **Economic Policy Institute (2025)** – Data showing U.S. productivity grew ~86% since 1979 while typical worker's pay grew only ~32%, indicating productivity outpaced pay 2.7× [4]. Illustrates the long-term productivity–pay gap.

[5] [6] **OECD Working Paper (2017)** – Finds that in past two decades most OECD countries saw labor productivity rise faster than median wages, *"implying raising productivity is no longer sufficient to raise real wages for the typical worker."* Attributes decoupling to declining labor income shares and rising top-end wage inequality [5] [68].

[12] [11] **World Economic Forum (2024)** – Analysis from WEF's Future of Growth Council on demographics and automation. Notes that widespread automation will make "undifferentiated labour less valuable as capital productivity rises" [12], potentially depressing wages and labor demand. Warns that output may rise but job displacement could *"leave some workers unemployed and depress wages for others."* [11]

[9] [10] **IMF Blog (Jan 2024)** – IMF Managing Director Georgieva's remarks on AI's labor impact. Nearly 40% of global jobs, and 60% in advanced economies, are *"exposed"* to AI. Roughly half of those exposed jobs risk

"lower labor demand, leading to lower wages and reduced hiring." [10] Emphasizes AI could replace tasks even in high-skill jobs.

[15] **Digital Habitats (Post-Labor Econ Q&A, 2025)** – Describes the Economic Agency Index (EAI): *"An economic agency index combines metrics of wages, property, and transfers to measure and manage economic well-being at the county level."* [15] Higher property-income share implies a more "post-labor" economy (less income from wages).

[16] **David Shapiro, Post-Labor Econ (2024)** – Further explains EAI (via social media excerpt): it is a composite of income sources (wages vs property vs transfers), indicating that *"the higher the property share, the more 'post-labor' you are."* [16]

[20] [21] **ZOE Institute (2023)** – Introduction of the Economic Resilience Index (ERI) for EU economies. Motivated by need for a single resilience measure based on theory. ERI uses 27 indicators across 6 dimensions (Economic Independence, Education & Skills, Financial Resilience, Governance, Production Capacity, Social Progress & Cohesion) to score countries' ability to thrive amid change [20] [21].

[30] [32] **Argonne Nat'l Lab (2024)** – Explanation of the County Economic Performance Index (CEPI). Developed to identify regions *"more adversely affected during... disruptions"* with near-real-time data [30]. CEPI tracks monthly county-level economic activity vs a base period; value 1 means back to baseline, below 1 means activity declined, above 1 means grown [32].

[33] [38] **Argonne Nat'l Lab (2024)** – Details on what CEPI measures: it estimates changes in county GRP by accounting for each county's industry mix and tracking national monthly employment changes by industry [33]. Covers all U.S. counties (incl. D.C., Puerto Rico, etc.), updated monthly [38].

[35] [36] **Argonne CEPI Technical Report (2024)** – Rationale and caution: rising GRP generally implies more economic activity (more spending, higher wages and profits), while decreases imply *"higher unemployment, lower incomes"* [35]. Notes that GDP growth via automation (capital investments) without output gains can mask employment losses, so employment must be considered alongside productivity [36].

[39] [58] **GSU/CSLF Study (2016)** – Analysis of property tax revenue in recessions. Finds downturns have two main fiscal effects: (1) lower home values reduce tax base, and (2) *"reducing property tax collection rates and increasing delinquencies."* [69] [58] Demonstrates link between economic decline (unemployment, income drop) and higher tax delinquency.

[40] [43] **Brookings (2023)** – Report on generative AI's workforce impacts. Found *"more than 30% of all workers could see at least 50% of their occupational tasks affected by ChatGPT-4"* [40], and **85%** of workers have at least 10% of tasks exposed. Notably, higher-education, higher-wage occupations have greater AI exposure (with a dip at the very top) [64] [43]. Earlier automation hit lower-skill jobs; generative AI is poised to significantly affect white-collar cognitive work.

[45] **Philadelphia Fed (2024)** – "Generative AI: Turning Point for Labor's Share?" scenario. Shows that if automation displaces workers even marginally, *"labor's share of income drops by nearly 2 percentage points, and capital's share rises by the same amount."* [45] Quantifies how a small cost advantage for machines can significantly shift income away from labor.

[65] [70] **Acemoglu et al., MIT (2023)** – Academic study linking task automation to wage changes. Introduces a measure of **direct task displacement** (automation-driven labor share decline in industries where a group works) [65] . Shows that a group's wage change relates to the share of its tasks lost to automation. They measure task displacement via "automation-driven labor share declines across industries" [70] , and find this explains a large portion of wage inequality trends.

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