

# The Political Economy of U.S. Output and Employment 2001–2010

by Duncan K. Foley\*

## Abstract

Service industries such as Finance, Insurance, and Real Estate, Education and Health Services, and Professional and Business Services, for which value added is imputed from incomes, are included in Gross Domestic Product, distorting measures of recession and recovery. An alternative index, Narrow Measured Value Added, which excludes all services, has similar historic correlations with employment to GDP, and tracks employment in recent business cycles better. The U.S. economy as measured by NMVA has a lower long-term real rate of growth. Long-term macroeconomic policy requires attention to some version of the productive-unproductive labor distinction of the classical political economists.

Keywords: GDP, imputation, productive and unproductive labor, 2007-8 crisis

## 1 Outputless crashes and jobless recoveries

After the dramatic financial events in the Fall of 2008 I brushed off my rusty macroeconomic tools (mostly primitive Keynesian multiplier-type analysis of the benighted 1960s) to try to estimate how big the

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downturn in the U.S. economy might be. I estimated a peak-to-trough decline in aggregate demand of 15–20% and, using the Okun’s Law rule of thumb that a 1% change in aggregate demand leads to a 1/2% change in employment, a decline in employment of 7–10%, leading to a peak unemployment rate of 11–14%.<sup>1</sup>

As it turned out, at least as measured by the most widely cited index of output, Real Gross Domestic Product (which I will refer to as GDP), I was way off in my aggregate demand projection, even given my own conservative margins of error, but quite well in the ballpark in my employment projection. This discrepancy, however, raised some rather fundamental questions in itself. How could the U.S. economy be producing real output, measured as value added, without employing more workers? What happened to the fairly stable and widely-accepted statistical correlations behind Okun’s Law? These questions became all the more puzzling and relevant as time passed and GDP signaled a “recovery” that was not apparent in employment measures. The debacle (for Obama and the Democratic Congressional majority) of the 2010 election lent further poignancy to these questions.

My first paranoid suspicion was that the “recovery” was concentrated in the financial industry. The financial industry (Finance, Insurance, and Real Estate–FIRE) shares a peculiar feature with the Government (GOV), Education and Health Services (EHS), and Professional and Business Services (PBS) industries in the national income accounts. While in other industries such as Manufacturing (MFG) there are independent measures of the value added by the industry and the incomes generated by it (value added being measurable as the difference between sales revenue and costs of purchased inputs excluding new investment and labor), there is no independent measure of value added in the FIRE and similar industries mentioned above. The national accounts “impute” value added in these industries to make it equal to the incomes (wages and profits) generated.<sup>2</sup>

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<sup>1</sup>These may seem to be large margins of error compared to the precision sometimes claimed for macroeconomic forecasts, but I confess to a large degree of skepticism about the purported accuracy of macroeconomic econometric modeling on both theoretical and statistical grounds.

<sup>2</sup>In an earlier version of this paper the following sentences appeared: “Thus when Apple Computer or General Electric pay a bonus to their executives, GDP does not change (since value added does not change—the bonus increases compensation of employees and decreases retained earnings), but when Goldman-Sachs pays a bonus to its executives, GDP increases by the same amount.” Several readers have pointed out that this formulation is misleading,

I was also aware of the fact that the national income accounts impute as value added to FIRE the difference between interest received and interest paid, which, as a result of the aggressive post-crisis easing of monetary policy, was bound to increase significantly. One consequence of the imputation of value added in these industries is that the relation between employment and value added in them is weaker and more volatile than in industries where value added can be measured directly from market transactions. Since there is no direct relation of imputed value added to sales, the connection of aggregate demand to measured output in the industries subject to imputation is likely to be much less close as well.

To explore this question, I looked at an index, which I will call Narrow Measured Value Added, or NMVA, which is calculated by removing GOV, FIRE, Other Services and Rest of the World (ROW) from nominal National Income and adjusting for inflation by dividing the resulting nominal value added by the GDP deflator.<sup>3</sup> (Any other broad "command" measure of price changes could be used for this purpose, such as a Purchasing Power Parity index.) Some services, such as Information Technology and Arts and Entertainment do have independently generated value added, but it turns out that consistent quarterly data for the post-WWII period at the industry level is available from the BEA only on the NMVA basis. Figure 1 compares deflated National Income, which is quite similar to deflated GDP, and deflated NMVA, together with U.S. Nonfarm Employment as index numbers for the period 2001-2010.

I learned several interesting things from Figure 1, some of which confirmed my prior suspicions and some of which did not (as is so often the result of actually looking at data). First, the 2001 recession, which is quite mild and short as measured by NI, is considerably deeper and longer measured by NMVA. But NMVA largely catches up to NI over the (not very vigorous) recovery from the 2001 recession, with NI peaking in 2007Q4 at about 17.5% and NMVA peaking in 2006Q3 about 16% above their 2001Q1 level. The downturns in both

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since financial institution accounts, like other capitalist firm accounts, measure profits as the difference between revenues and costs, and deduct bonuses from these accounting profits as a cost.

<sup>3</sup>Thus NMVA includes Agriculture, Mining, Manufacturing, Construction, Transportation and public utilities, Wholesale Trade and Retail Trade. The value added realized in Wholesale and Retail Trade can be regarded as part of the value added in productive sectors.

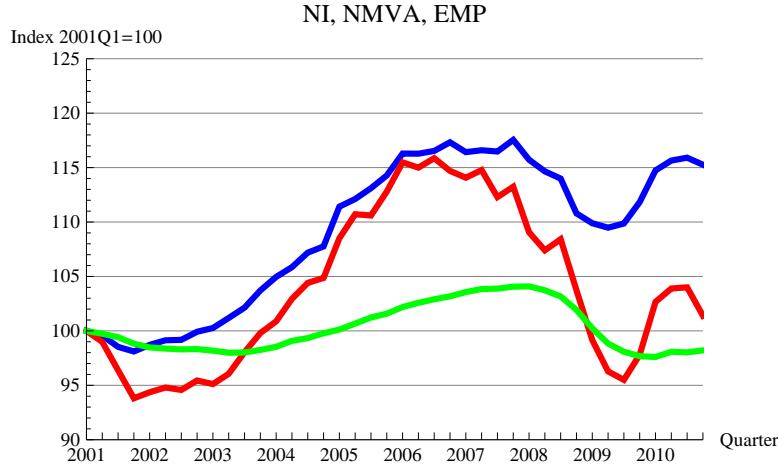


Figure 1: Indexes of NI (blue), NMVA (red) and Nonfarm Employment (green) from 2001Q1–2010Q4. Source: BEA NIPA Tables 6.1B–D and BLS Series CES00000001.

NI and NMVA precede the financial crisis of Fall 2008 by several quarters. NMVA, in fact, turns down five quarters before NI. The fall in NMVA is much bigger than in NI, 20% peak to trough for NMVA, and 8% for NI. Both indexes do show a definite recovery in 2009, but much less complete for NMVA, which still remained 12% below its peak in 2010Q3, while NI was only 1.7% below its peak. The NMVA index is thus much more compatible with both the political economic “experience” of the downturn, and with its employment dynamics than the GDP index. Finally, and ominously, both NI and NMVA turned down in the fourth quarter of 2010. The 2.5% quarterly fall in NMVA is quite large, raising the prospect of further substantial employment losses and a “double-dip” recession in 2011.

## 2 Historical correlations

Both NI and NMVA (which are reported consistently with each other on a quarterly basis by the BEA) correlate closely with U.S. Nonfarm Employment over the post-WWII period from 1948–2010, as Figure 2 shows.

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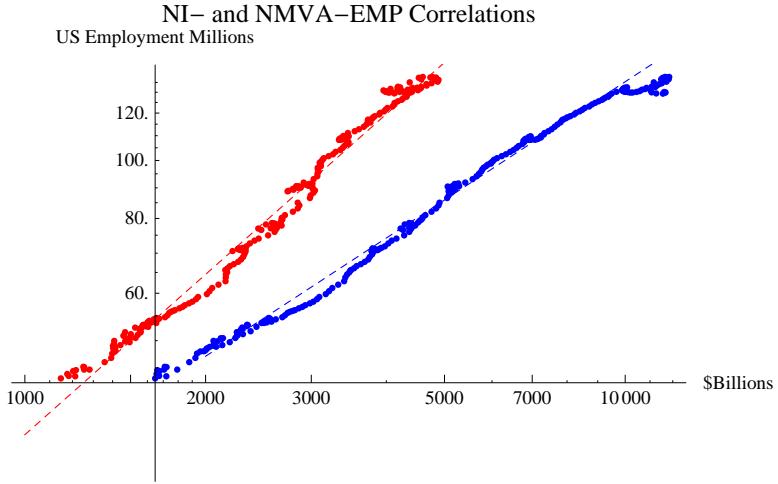


Figure 2: NI (blue) and NMVA (red) are plotted on the horizontal axis, with the corresponding quarter's U.S. Nonfarm Employment on the vertical axis. The dashed lines show the fits for data up to 2000.

mand as measured by either NI or NMVA and employment shifted downward noticeably after 2000 (though on this scale the effect appears rather small).

A closer look at the 2001–2010 quarterly data is provided in Figure 3.

Figure 3 shows that the historical NI-employment relationship is a much poorer guide to aggregate-demand-employment dynamics after 2001 than the historic NMVA-employment relationship. An analyst using NI as a measure of aggregate demand would have seriously overestimated employment, while an analyst using NMVA as a measure of aggregate demand would have estimated employment considerably more accurately. Something like this seems to have happened in the formulation of fiscal and monetary policy in the immediate aftermath of the financial crash in the Fall of 2008.

From these rather crude empirical investigations I draw the following conclusions. Both NI and NMVA have strong historical correlations with employment. The correlation of NMVA with employment continued to hold in the last two business cycles. There is, however, a cyclical component to the deviation of NI from NMVA. NI shows

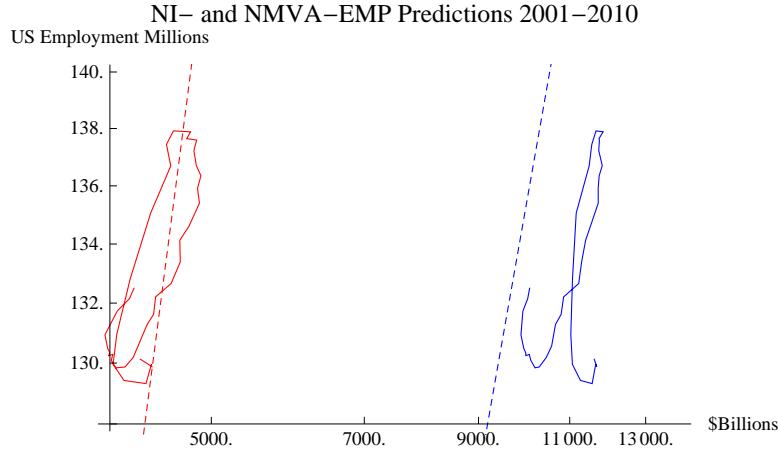


Figure 3: The 1947-2000 fitted relation between NI (blue) and NMVA (red) together with quarterly points from 2001Q1 to 2010Q4.

smaller cyclical downturns than NMVA, and more rapid recoveries. This cyclical deviation appears to have increased in magnitude, at least over the last two U.S. recessions. As a result cyclical NI fluctuations have deteriorated as a guide to employment fluctuations in the U.S. economy. If the goal is to understand the severity of business cycles as fluctuations in aggregate demand and the impact of aggregate demand on employment, NMVA is a better choice than NI as an index. The superiority of NMVA as a business cycle and employment indicator is understandable because narrow measured value added is much more closely related to aggregate demand than the imputed value added in service industries like FIRE.

### 3 What do we talk about when we talk about “the economy”?

National income accounting arose historically as an attempt to quantify the factors determining short-run fluctuations of national income (Carson, 1975, see). The NIPA system has evolved over time in response to various pressures to find indicators to ask particular questions. One important pressure has been to broaden measures of output

to measure standards of living more comprehensively. This seems to be the motive for “imputing” a consumption rental value to owner-occupied housing.<sup>4</sup> It is an axiom of the double-entry bookkeeping method at the heart of the national accounts that income and production must be measured consistently. Thus there is pressure to include important income-generating activities, such as finance, on the product side as well. It is impossible for any single index to answer all or even a broad range of economically relevant questions. An indicator that is a sensitive business cycle barometer may not be a very good measure of long-run growth of consumption possibilities, or of incomes.

From a methodological point of view, NMVA is just as consistent a measure of the value of output as is NI or GDP. The inclusion of FIRE and other imputed outputs in GDP is the result of convention, not economic or accounting logic.

Figure 4 shows what the U.S. economy would look like if we used NMVA rather than NI to measure its size.

The economy measured by NMVA is, of course, smaller than that measured by NI, but it also has a significantly lower long-run growth rate (2.4% per year as opposed to 3.3% per year). The inclusion of imputed incomes in the industries excluded from NMVA flatters measured real economic growth. (On the other hand NI may underestimate the contribution of the excluded industries’ activities to economic welfare, by imputing incomes generated as the value of output in these industries. For example, GOV may make a much larger and faster growing contribution to economic welfare through its provision of services than the imputation procedure recognizes.)

## 4 Productive and non-productive labor

Just what transactions does it make sense to include in a broad index of the value of a capitalist economy’s production? Adam Smith and David Ricardo, for example, found the distinction between “productive” and “unproductive” labor a logical and indispensable tool to

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<sup>4</sup>Similar reasoning might have led to an imputation of the value of domestic services such as childcare, food preparation, and auto maintenance, but so far the official indexes have steered clear of this innovation.

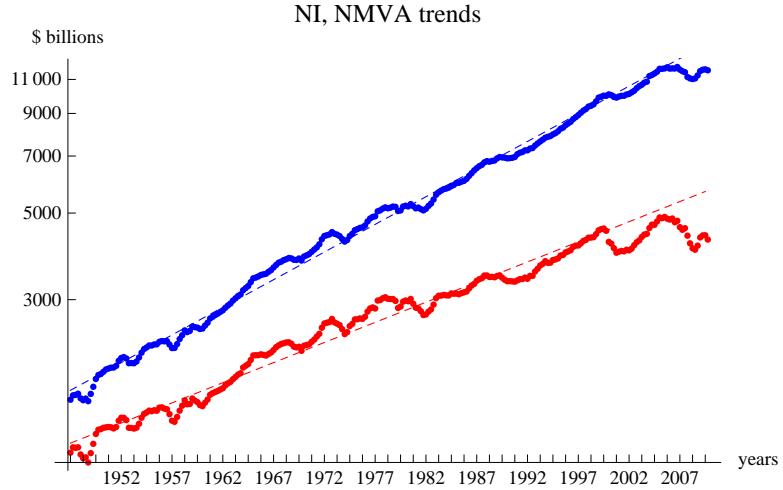


Figure 4: Time series of NI (blue) and NMVA (red) plotted on a logarithmic scale, with linear fitted trend lines. The slope of the trend for NI implies a growth rate of 3.3%, and for NMVA 2.4% per year.

understand the operation of a capitalist economy. What the classical political economists meant by the “theory of value” was an account of how in the real world economic production generates revenues, and how those revenues are distributed as incomes. The most important divisions of sales revenue were the recovery of the cost of purchased inputs and the payment of wages. Sales revenue less the cost of purchased inputs is value added. Value added less wages is what Karl Marx calls “surplus value”, which is distributed as taxes, rents, interest, and profit.

From this point of view “imputed” outputs that are not actually marketed and realized as money revenue are irrelevant. The classical political economists (and Marx, who elaborated their analytical system) distinguished between “productive” labor that produced a marketed good or service and thereby added value to whatever inputs were required in the productive process, and “unproductive” labor that was employed out of the resulting revenues, particularly out of rents and profits. The paradigmatic example of unproductive labor was the employment of personal servants by wealthy households. Marx

noticed that the capitalist system also gave rise to a further class of unproductive workers employed not to produce commodities, but to facilitate the realization of their value through sale on the market, in retail and wholesale trade, or the financing of production. From a technical point of view Marx regarded the wages of these workers as paid out of the value added to commodities by productive labor. In some cases these unproductive activities are provided by capitalist firms, in which case both the profits and wages paid by these firms are a deduction from the value added by productive labor. The classical political economists viewed unproductive labor as a leakage from the circuit of capital, lowering accumulation by diverting surplus value away from profits.

The profits of financial capital from this classical political economy point of view are a share of the surplus value that takes the form of interest paid on borrowed capital. From this perspective it is double-counting to “impute” an imaginary produced “financial service” as the counterpart of interest payments. Interest payments are a transfer of a part of the surplus value appropriated in production, not the purchase of a good or service. From the beginning, the problem of the treatment of financial interest posed problems for the creators of the system of accounts, and discussion of the appropriate method for the measurement of the value and volume of “financial services” continue to provoke vigorous debate (see, for example Diewert, 2007; Christophers, 2009). Parts of other service categories, such as health care and professional and business services might also reasonably be regarded as costs of the reproduction of society rather than as contributions to its net output.

One of the important changes in political economy that occurred with the marginalist revolution was the abandonment of this materialist theory of value and its replacement by the presumption that things are worth just what someone will pay for them, and the converse proposition that if someone is paid money they must be providing a good or service in exchange. From this point of view the distinction between productive and unproductive labor makes no sense: the servants in the landlord’s dining room and stable are just as productive as the workers in the mill or on the farm, and the value of their product is measured by their incomes. The manufacturer who hires an advertising firm to hawk its products is buying a service, whose value is what the market will bear. The incomes of wholesalers and retailers must reflect real services they perform in the marketing of commodities. A

comprehensive index of production, from this perspective, must consistently include a measure of these services, even if they are difficult or impossible to measure directly.<sup>5</sup>

National income accounting is firmly based on the premise that the purchase and sale of existing goods and changes in the market prices of existing assets do not contribute to the value of current product. Thus national income accounts take great pains to distinguish “final” sales from “intermediate” transactions; to exclude transactions in existing assets from national income; and to correct business accounts, which include capital gains and losses in income, through the device of “capital valuation” and “inventory valuation” adjustments. But financial transactions tend to blur these well-established distinctions. Brokerage fees, for example, arise because both the purchaser and seller of an existing asset perceive the transaction to be advantageous, and are willing to pay something to achieve it. Brokers do expend effort, just like factory workers, so it is relatively easy to regard their incomes as a compensation for producing something. Similarly, derivative contracts that shift contingent risk from one party to another lead to a perceived improvement in both parties’ welfare; how is this different from the production and sale of a computer or car? Financial institutions enjoy very considerable latitude in deciding how to “book” various transactions as contributing to their capital or income accounts. Thus while the principle that transactions in existing assets and changes in their prices do not contribute to the value of current product is clear enough, its consistent application to financial institution and other services accounting poses formidable challenges.

Political economic debate is unlikely to lead to much resolution of these sometimes arcane methodological issues in national income accounting, but the experience of the current U.S. downturn is a sharp reminder that the foundations of the theory of value can have surprisingly important real-world consequences.

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<sup>5</sup>The evolution of national accounting methodology under the influence of neoclassical economic theory seems destined to move inexorably in this direction. The next revision of the System of National Accounts, we are told (Diewert, 2007), will require the imputation of indexes of the services of capital goods and land; the method for doing this is bound to be based on profit and rental incomes.

## 5 Incomes and production

The political economic questions lurking behind the accounting and measurement problems I have discussed here concern the long-term goals of economic development policy, particularly in the advanced capitalist nations. Economic policy in these countries has been complacent about or actively encouraging de-industrialization on the grounds that with increases in per capita income the “tertiary” sector of services inevitably grows as a proportion of the economy. Finance has an apparently magical ability to produce incomes and tax revenues without messy complications such as industrial labor strife, trade conflicts, and even environmental degradation and resource use, which is bound to endear it to the typical bourgeois politician. This romance is further inflamed when, as in the U.S., financial institutions can channel big bucks to political campaigns.

But there remains the question of just how these remarkable financial incomes are generated economically, and whether an uncritical reliance on the financial industry can provide a viable long-term financial policy. From a classical political economy perspective financial incomes, whatever their form, ultimately have their origin in a claim on surplus value from productive activities. It may be a timely moment to return to the perspectives of the author of *The Wealth of Nations* in pondering these questions.

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