

# SPECIAL REPORT

## TD Economics



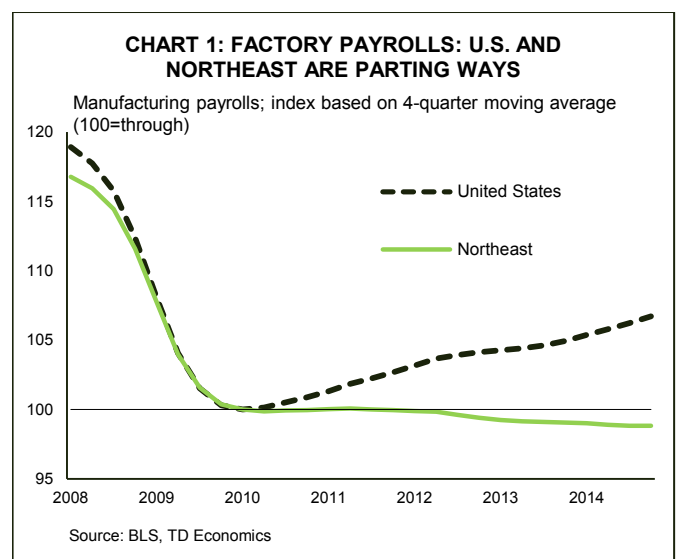
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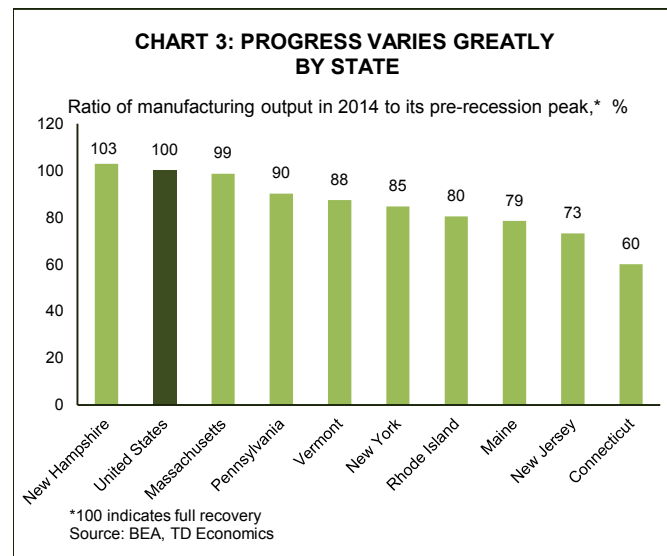
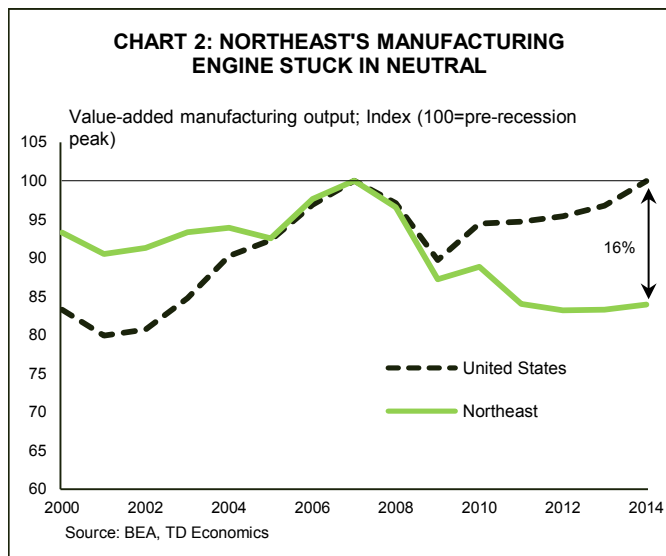
# WHY ARE WE NOT SEEING A MANUFACTURING REBOUND IN THE NORTHEAST?

### Highlights

- The U.S. manufacturing sector enjoyed a relatively swift bounce-back during the recovery. However, the rising tide did not lift all boats equally, with factory activity in the Northeast showing little improvement.
- This underperformance was due to the unfortunate coincidence of a large number of factors. Considerable trade exposure to underperforming European markets and reduced federal defense spending were chief among them. However, consolidation in some of the region's advanced manufacturing industries, and unfavorable industry composition also weighed on performance.
- Despite the general weakness across the region, performance between states has been varied. Output has nearly recovered to its pre-recession level in Massachusetts and reached a new peak in New Hampshire. Meanwhile, the underperformance was most prevalent in Connecticut, Maine, New Jersey and New York.
- The prospects for the region's manufacturing industry remain clouded. While the headwinds related to the weakness in the E.U. and defense spending cuts are easing, rapid appreciation of the U.S. dollar, high cost structure and lagging productivity growth will continue to weigh on regional manufacturing performance in the medium term.
- That being said, the region is home to many advanced manufacturing industries and has an ample pool of highly-educated labor, which could work to its advantage longer-term, provided it addresses some of its most pressing issues.

Following a large downturn during the recession, the U.S. manufacturing sector enjoyed a relatively swift bounce-back during the recovery. While industry payrolls remain 12.2% below their pre-recession level, they added 877k jobs since the trough, accounting for 7.4% of all newly created jobs. Rising employment alongside improved capacity utilization and productivity gains have bolstered output. Measured in real, or inflation adjusted terms, value-added manufacturing output has recovered to its pre-recession level last year. Much of the rebound was cyclical in nature, related to the general improvement of economic conditions and rising demand, typical during economic recovery. However, the significant progress has also prompted some commentators to talk about the manufacturing “renaissance”, with lower domestic natural gas prices and unit labor costs, among other factors, being





supportive of domestic manufacturers.<sup>1,2</sup>

However, the rising tide of U.S. manufacturing did not lift all boats equally. In particular, factory activity in the Northeast region has trailed the national performance. Some states, such as Connecticut, Maine, New York, and New Jersey have not seen any gains in manufacturing output or employment (see Chart 1 and Chart 2). Prior to the recession, the region accounted for about 16.5% of national manufacturing output, but its share of production fell to around 14% by 2014.

Reasons for the Northeast's underperformance can be chalked up to several factors. On the international front, significant exposure of regional trade to the European Union – where the recovery has been slow and unsteady – has hindered export growth. On the domestic front, sequestration and the subsequent restraint in federal defense spending hurt manufacturing performance in states reliant on federal procurement contracts, such as Connecticut and Maine. Also, along the lines of industrial composition, the lack of exposure to the rapidly recovering motor vehicle and part production industry and consolidation amongst the region's pharmaceutical and electronics firms has further weighed on manufacturers. Last but not least, the region faces some structural challenges, with its competitiveness eroded due to its high costs of production and lagging productivity gains.

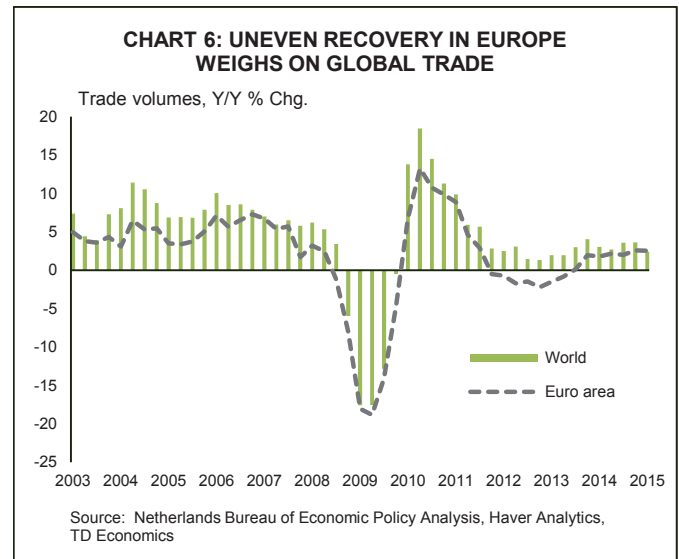
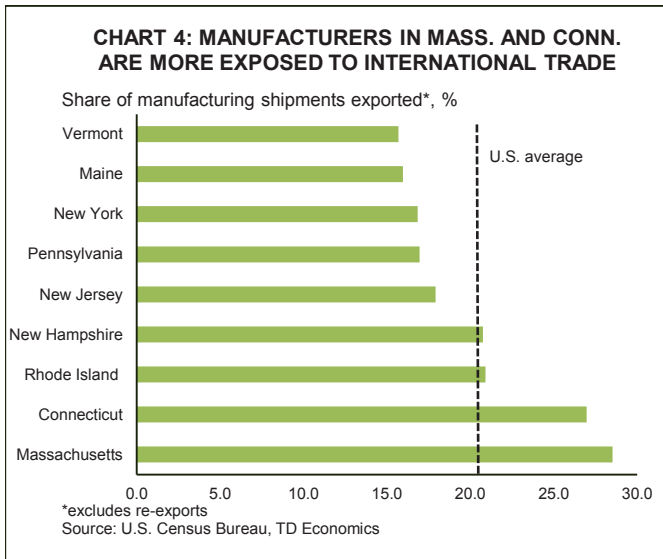
### Diverging Paths

Relative to the nation, the downturn in the Northeastern manufacturing sector during the recession has been deeper

and the recovery has also been more protracted (see Chart 2). Regional manufacturing output has grown by a paltry 0.9% since the trough and remains 16% below the pre-recession level. Meanwhile, at the national level, manufacturing output has recovered to the pre-recession level last year. Despite the general weakness across the region, performance between states has been varied, with some Northeastern states largely keeping pace with the national trend, while others showed little improvement (see Chart 3). Output has nearly rebounded to its pre-recession level in Massachusetts and reached a new peak in New Hampshire. Vermont also topped its previous peak by 2011, before output shrunk more recently as consolidation in the large electronics industry led to downsizing. Pennsylvania has seen modest gains; however manufacturing GDP there is still 10% below its pre-recession peak. Ditto for Rhode Island, where output grew by 10% since the trough, but remains 20% below its peak. In New York, factory output is also well below peak, and even more worrying, has seen virtually no growth at all. Still, the underperformance is greatest in Connecticut, where activity remains nearly 40% below pre-recession level, with the gaps also large in New Jersey and Maine at 27% and 21%, respectively.

### The Trade Link

At least some of the divergence between the Northeast and the rest of the U.S. is related to international developments. While the U.S. economy remains largely domestically oriented, many industries have considerable exposure to the rest of the world. This is especially true for the manu-



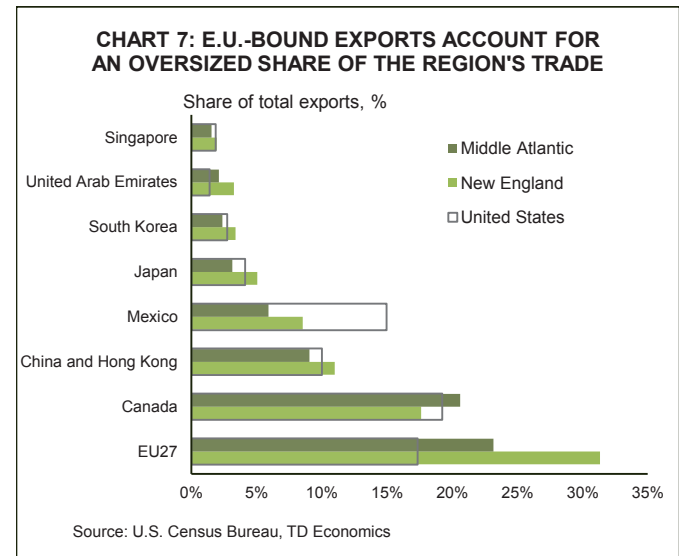
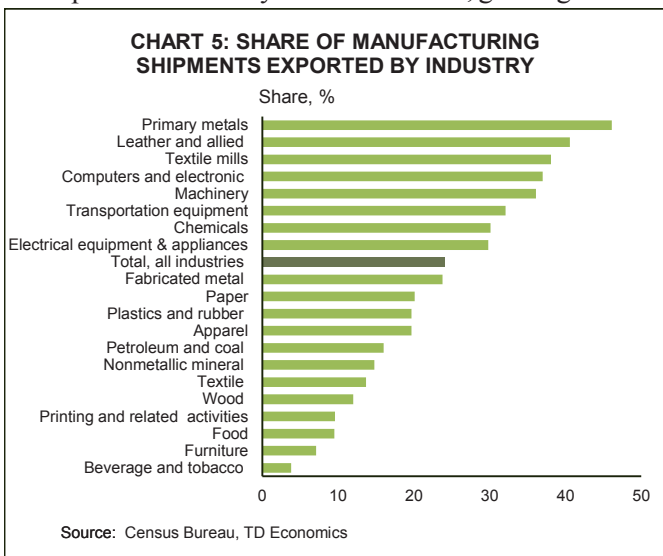
facturing sector, which is more exposed to international trade than the rest of the economy. While merchandise exports account for less than 7.5% of U.S. gross output, about 20% the nation’s manufacturing output is exported.

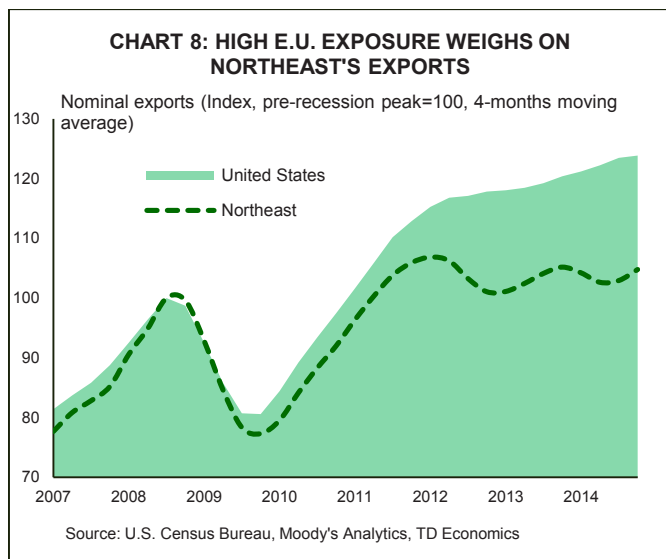
A number of Northeastern manufacturers have an even higher reliance on international trade. Massachusetts and Connecticut stand out from the pack, with manufacturing exports accounting for 29% and 27% of total production, respectively (see Chart 4). This is in large part due to the fact the manufacturing industries, such as machinery, computers & electronics, electrical, and transportation equipment, which are prevalent in these states have an above-average propensity to export (see Chart 5).

Unfortunately for export-exposed states, aside from the initial post-recessionary rebound in 2010, global growth has

been sluggish (see Chart 6), with global trade advancing by an average of 2.7% per year since 2012 – or less than half of the gains seen prior to the recession. Much of this slow-down has been attributed to economic woes in Europe. The region, which accounts for a third of global trade, suffered a shallow but protracted recession between 2011 and 2013, which sapped demand for imports.

The fallout from the Eurozone slowdown has been felt more acutely in the Northeast, where all states, aside from Maine and Vermont, have an above-average share of exports destined to the E.U. (see Chart 7). This share is particularly high in Connecticut and Massachusetts<sup>i</sup>, where manufacturing shipments to Europe account for 38% and 34%, respectively – double their share in the national export basket (17%). New Hampshire also has above-average

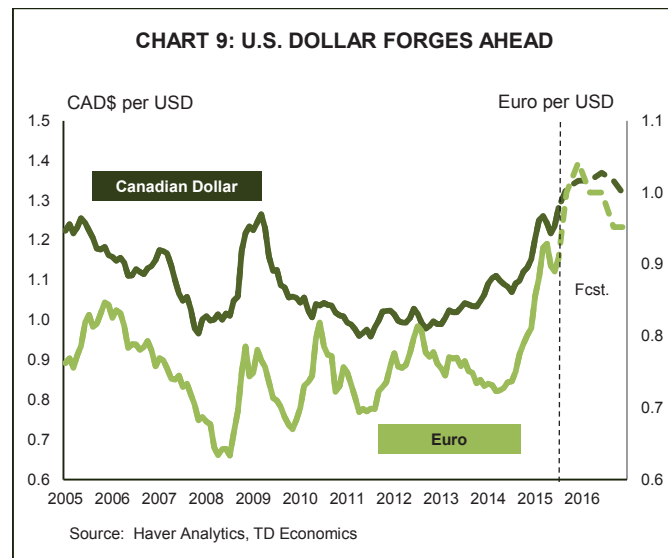




dependence on the European trade (28%). As a result of this considerable exposure to underperforming European markets, regional exports have lagged relative to the nation over the past few years (see Chart 8), exacerbating the weakness in manufacturing.

The Northeast's other important trading partner, Canada – the main trading partner for Maine, Vermont, and Pennsylvania, has fared well during the recovery. However, its growth was heavily skewed to Western Canada, while the Eastern part of the country – which is the key destination for exports from Maine and Vermont – has performed considerably worse. Fortunately, there are signs that some of the headwinds hindering performance are beginning to ease. Economic growth in the European Union over the last two quarters has surprised to the upside, delivering its best result in four years. Growth is expected to average 1.9% for the year as a whole – a considerable improvement relative to a 0.7% average pace seen over the past two years. Strengthening economic conditions across the Atlantic will lead to more robust demand for imported goods. In fact, this has already manifested itself, with real imports advancing by around 5.0% y/y in recent quarters – much better than the 0.6% average growth during the 2012-13 period.

While economic growth in Europe is expected to pick up, the same is not true for Canada where this year's GDP growth will be less than half of its 2014 pace. Fortunately, given its south-to-north trade linkages, the Northeast should be shielded from the bulk of the weakness which will be primarily concentrated in the Western oil patch provinces, while the rest of the country and particularly its manufactur-



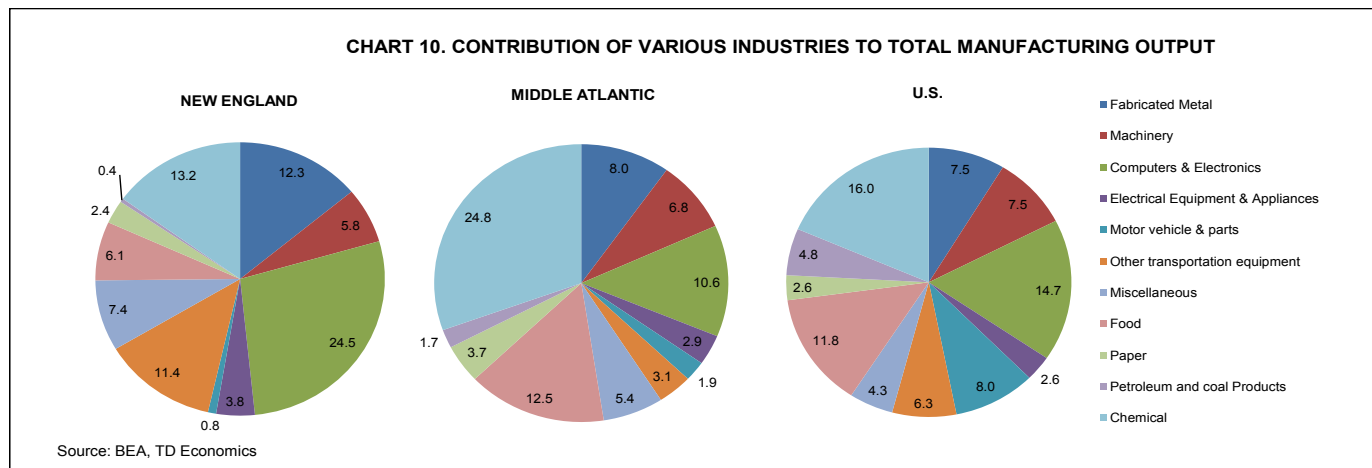
ing centers located in Ontario and Quebec are expected to fare better. Importantly, Canadian growth should strengthen into 2016 and beyond.

But, the benefit from a pickup in European and Canadian demand will be partially offset by the appreciation of the U.S. dollar vis-à-vis the euro and the Canadian dollar – both of which are 20% cheaper than a year ago (see Chart 9). These unfavorable exchange rate dynamics will likely continue to weigh on export volumes and profits this year and next.

### Planes, Paper and Pharma

In addition to challenges related to external factors, Northeastern states also have their individual Achilles' heel in the form of the specific underperforming industries. In Connecticut and Maine, for example, much of the drag comes from the disappointing performance of non-automotive transportation equipment manufacturing. The industry produces items such as planes, helicopters, ships, as well as their components, and accounts for over a quarter of total manufactured output in Connecticut and 15.6% in Maine. This is well above the 6.3% share on the national scale. Moreover, much of the output from the regional industry is defense-related equipment, usually purchased by governments both abroad and domestically.

Not surprisingly, federal fiscal restraint has proven to be a major headwind for this sector, with defense spending declining in both real and nominal terms over the past three years. Connecticut, where federal procurement accounts for 5% of its GDP – the seventh highest share among U.S. states,

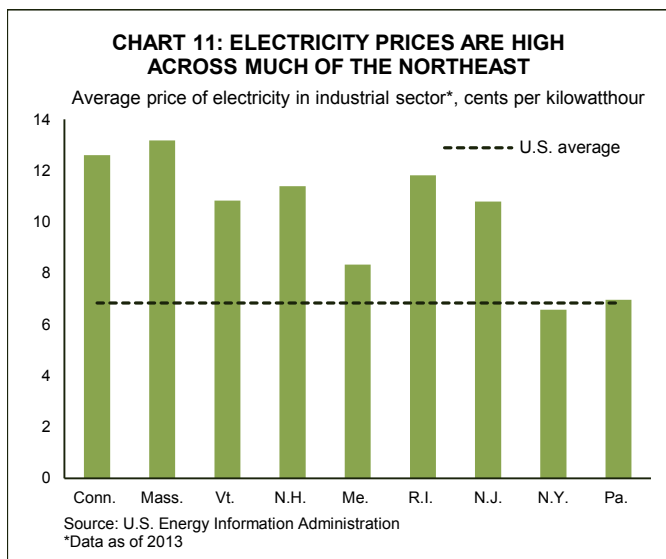


bore the brunt of the cuts. Aerospace and other transportation equipment is also Connecticut’s top export. On that front, falling defense spending in the European Union and Canada, where over half of Connecticut’s transportation equipment exports are destined, made matters worse. As a result, between 2010 and 2013, real industry output declined by 24%, subtracting a massive 6.5 percentage points from manufacturing growth. While government spending will likely remain restrained going forward, the worst of the cuts appear to be in the rear-view mirror. In fact, shipbuilding activity has already accelerated in Connecticut, Maine, and Rhode Island. Additionally, Connecticut has recently received a federal designation as “Advanced Manufacturing Communities region”, which will allow it to tap into \$1.3 billion in federal funding dedicated to economic initiatives in the manufacturing industry.

The drag from reduced defense spending was smaller in Maine than in Connecticut. However, it came on top of ongoing challenges in the state’s other core industries - paper and wood production. The struggles of the paper manufacturing are neither new nor unique to Maine, with the industry in long-term structural decline as a result of international competition and advances in digital technology. However, despite being considerably smaller than it once was, paper production continues to have a significant presence in the state, accounting for 16% of its manufacturing GDP – six times the national average. Wood products manufacturing also has a large footprint in the Green Pine State. It too has underperformed in recent years as a result of a downturn and the subsequent slow recovery in the U.S. single-family housing market.

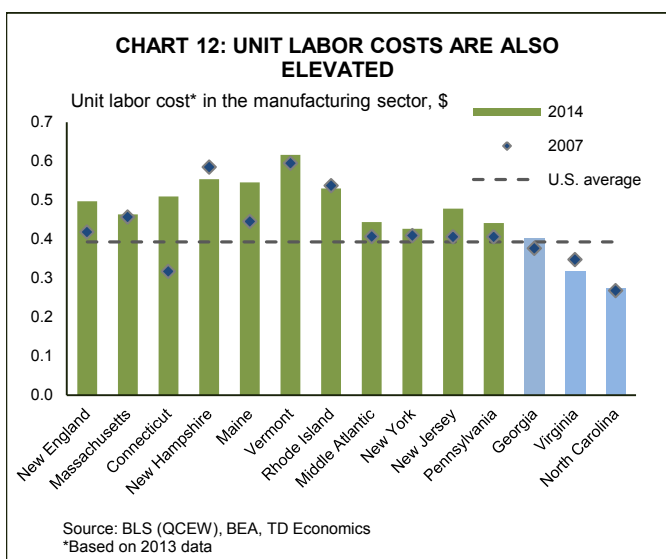
Meanwhile, some of the weakness in states such as New Jersey, New York, Pennsylvania as well as Connecticut can be chalked up to underperformance in chemical manufacturing. This industry has particularly large representation in New Jersey, where it accounts for a massive 42% of total manufacturing output – more than twice the national average. Weakness in chemical manufacturing can be traced back to the pharmaceutical industry, which makes up a large portion of it, and which has been reducing its footprint in the region. The main reason for this disappointing development is industry-wide restructuring as a result of the “patent cliff” – expiration of a series of patents for blockbuster prescription drugs – which has been driving cost-cutting and consolidation. Partially in response to revenue declines and cost pressures, big pharmaceutical companies have also been increasingly seeking to acquire promising small and medium biotech firms and turning their attention to the well-established bio-tech hubs in California, Massachusetts and North Carolina.

The final feature of the industrial makeup which all Northeastern states share in common is their low representation in the autos and parts industry, which accounts for less than a 1% of the region’s manufacturing output versus an 8% share at the national level. With its output tripling since 2009, the U.S. auto industry was one of the chief driving forces behind the recovery of U.S. manufacturing. However, given the small footprint of autos and parts production in the Northeast, the region’s manufacturers have not felt the benefits from of the sector’s strong consumer-led expansion during the recovery.



### Competitiveness challenges

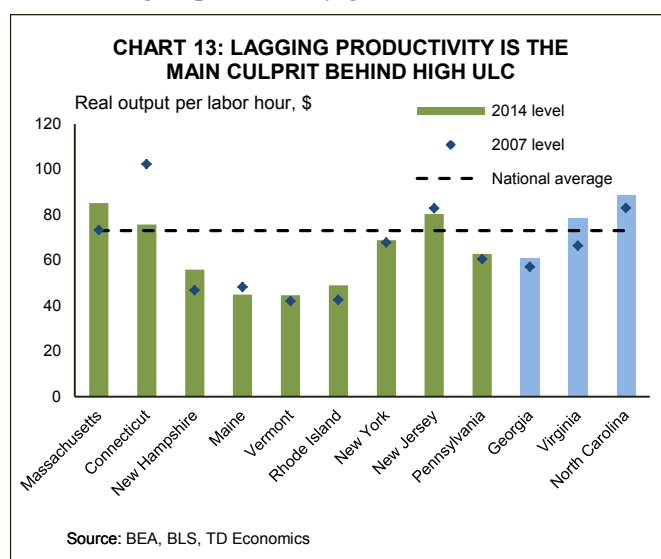
Notwithstanding some transitory weakness in international trade and certain industries, perhaps one of the biggest overarching headwinds to manufacturing performance is the region's high cost structure, made even more acute by low (and, in some cases, declining) labor productivity. The issue of high costs is particularly significant in New England, which has some of nation's highest electricity costs (see Chart 11) as well as labor costs, which are well above the average (see Chart 12). Regional unit labor costs (ULC) – defined as the ratio of labor compensation to industry's output (in real terms) – are the highest in New Hampshire, Vermont and Rhode Island, where they surpass the national average by 40-50%. The region's lowest ULCs can be found



in New York, Pennsylvania, and Massachusetts, but even here they exceed the national average by 9% to 18%. All in all, unit labor costs are above the national average in all Northeastern states, and look particularly elevated next to some of their South Atlantic peers, such as Virginia, North Carolina and Georgia (see Chart 12), where much of the recent manufacturing investment has been taking place.

New England's manufacturing ULC have been falling steadily between 2000 and 2007, however some of this improvement has unwound since then. The deterioration in cost competitiveness has been especially staggering in Connecticut, where ULC rose by nearly 60% between 2007 and 2014, leaving them 30% above the national average. Cost competitiveness also deteriorated in Maine and New Jersey, with unit labor costs rising by 27% and 18%, respectively. By comparison, in the U.S. and elsewhere in the region ULC have been essentially unchanged since 2007.

Low, or in some cases declining labor productivity, is one of the main culprits behind the unfavourable unit labor cost profile across much of the region. Aside from Massachusetts, Connecticut and New Jersey labor productivity lags the national metric in all New England states (see Chart 13). While for now, labor productivity in Connecticut remains above the national one, this may not last, as the metric has been moving in the wrong direction since 2007, contracting by almost a quarter. Productivity has also deteriorated in Maine. In Vermont, New Jersey, New York and Pennsylvania labor productivity has been mostly stagnant. Meanwhile, Massachusetts and New Hampshire are the only states which saw meaningful productivity gains.



## Reasons for hope

Significant concentration of high-tech manufacturing in Massachusetts and New Hampshire has helped to buoy their productivity growth, leading them to outperform the rest of the Northeastern neighbors. Production of computers and electronic products makes up around a third of manufacturing output in each of the two states. By contrast, excluding Massachusetts and New Hampshire, this industry represents only one-tenth of the region's manufacturing. Nationally, the computer and electronics industry has been leading the charge in terms of productivity growth among manufacturing industries. Between 2001 and 2011 labor productivity in computer and electronics industry advanced on average by 5.4% per year, while the annual growth in multi-factor productivity averaged 9.1% per year. This compares to 2.8% and 0.7% in non-computer manufacturing.<sup>3</sup> It is therefore not surprising that Massachusetts and New Hampshire have been leading the Northeast in terms of manufacturing recovery. Computers and electronics also account for nearly 40% of all manufacturing production in Vermont, as a result of the significant presence of IBM in the state. However, in 2014 the industry's output declined by 40% as IBM began to transition away from its traditional hardware business toward software. This weighed significantly on the headline number last year. Importantly, the clouds are dissipating and the outlook for Vermont's high-tech manufacturing has brightened following the sale of IBM's semiconductor manufacturing facility to a chip manufacturer, GlobalFoundries.

While other Northeastern states may not have the same edge in production of computers and electronics, many of them have no lack of high value-added manufacturing industries in which they have a comparative advantage, such as pharmaceutical & chemical products, aerospace, green energy, and bio- and nano-technology. Additionally, thanks to the prevalence of top research universities and the ample pool of highly-educated labor, many Northeastern states have the human capital resources and the expertise needed to grow and advance these sectors. While they may have lost some of the momentum over the past several years, these are some areas that have the biggest scope for improvement. It is encouraging to see that state governments are taking steps in this direction. In 2008, Massachusetts has launched a 10-year \$1-billion Life Sciences Initiative. In 2011 Connecticut has followed suit with the Bioscience Connecticut Initiative centered on UConn Health Campus.

Meantime, New York has created tax-free zones on or near state college and university campuses, where businesses collaborating with universities will be exempted from taxes for up to 10 years.

The region is also taking steps to address its high cost structure by lowering the tax burden on businesses. Many of the states in the Northeast score poorly in the Tax Foundation's ranking of State Business Tax Climate Index. For example, Maine, New Jersey, Pennsylvania, Vermont, and Rhode Island rank in the bottom ten in terms of their corporate tax burden.<sup>4</sup> However, changes are taking place. The Empire State has passed a substantial corporate tax reform, which, among other measures, has lowered the corporate tax rate from 7.1% to 6.5% and will phase out the capital stock tax by 2021. The Tax Foundation expects that the ranking of New York's corporate tax component of the Index will improve from 20th to 4th once the tax reform is fully phased in. Other states are also gradually following suit. In Rhode Island, policymakers have approved a reduction in corporate income tax from 9% to 7%. Pennsylvania is planning to eliminate capital stock tax by 2016.

All in all, it is encouraging to see that many states are moving in the right direction by implementing initiatives aimed to attract innovative high-tech and bio-tech companies, support R&D and capital investment, promote partnerships between private sector and universities, and cut red tape. That being said, it will take time for these measures to bear fruit. In the near-term some modest improvement in the outlook will be underpinned by rising demand from Europe and less drag from federal defense sector. However, even as these headwinds ease somewhat, the region's manufacturing sector is expected to continue to underperform relative to the nation.

## Concluding remarks

U.S. manufacturing has made considerable headway over the past few years, but the Northeast region remained largely on the sidelines. As we have documented, this underperformance was due to the unfortunate coincidence of a number of factors. These included: considerable trade exposure to underperforming European markets, reduced federal defense spending, consolidation amongst the region's pharmaceutical and electronics firms, considerable footprint of some legacy industries, such as paper manufacturing, and underexposure to the rapidly recovering auto and parts

production. Fortunately, some of these headwinds are beginning to ease. Economic growth in the E.U. is firming up and U.S. federal defense spending is levelling off, which should lead to modest improvement in the near-term regional manufacturing outlook. That being said, the rapid appreciation of greenback vis-à-vis the euro and Canadian dollar will limit the scope for improvement in exports. Looking beyond the near-term, prospects for the region's manufacturing industry remain clouded by reduced footprint of some of the high value-added industries and structural challenges related to high cost structure and lagging productivity growth.

Some consolation comes from the fact that manufacturing accounts for a smaller share of the regional economy than it does at the national level. Thus, much of the Northeast's economic strength lies within its diverse service sector. Industries, such as professional & business, scientific & technical, financial, healthcare & educational, and leisure & hospitality services provide a solid foundation for regional economy. The outlook for the services sector remains bright, and it will continue to be region's key engine of growth while the goods-producing sector will continue to play second fiddle.

*Ksenia Bushmeneva, Economist*  
416-308-7392



## Endnotes

- i. While Massachusetts certainly has an above-average trade exposure to the European markets, the 34% E.U exports share partially overstates the importance of the European trade for state manufacturing. This is due to the fact that exports from Massachusetts to the European Union include a large share of non-ferrous metals, made up primarily of refined gold. Even though non-ferrous metals represent a significant share of Massachusetts trade, the impact of this industry on Massachusetts manufacturing is limited. The non-ferrous metals manufacturing is a subset of the primary metals manufacturing industry, which accounts for only a small share of state's manufacturing output (0.8%). Moreover, much of the exported gold represents re-exports, meaning that it just passes through the state and therefore has a small value-added to the local economy. Excluding primary metals from Massachusetts' total exports to the E.U. lowers the share of Massachusetts exports shipped to Europe from 34% to 28%, which is still well above the 17% seen at the national level.

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