

SPEECH

Escaping stagnation: towards a stronger euro area

Speech by Isabel Schnabel, Member of the Executive Board of the ECB, at a lecture in memory of Walter Eucken

Freiburg, 2 October 2024

The euro area economy is stagnating. Over the past two years, real GDP has expanded, on average, by only 0.1% per quarter. Surveys among firms indicate that growth is likely to remain subdued during the second half of this year.

Weak growth reflects, to a large extent, the exceptional shocks that hit the euro area economy in recent years, most notably the pandemic and Russia's invasion of Ukraine.^[1]

Another reason is the tightening of monetary policy. From late 2021 to the end of 2023, bank lending rates for house purchases by households increased from 1.3% to 4%, and those for corporate loans from 1.4% to 5.3%. Such levels had not been seen in more than a decade.

Dampening growth in aggregate demand was needed to restore price stability.

In 2021, when the euro area economy reopened in the pandemic and the economy's supply capacity was still severely constrained, real private consumption rose by more than 8% in just two quarters.

When we began to raise our key policy rates in July 2022, households and firms started to spend less and save more, thereby bringing supply and demand closer into balance.

Yet, although the peak impact of monetary tightening is likely to be behind us and real incomes are rising as inflation falls and wages increase, growth remains shallow. Over the past 18 months, the recovery has repeatedly been weaker than anticipated.

Aggregate growth figures mask, however, significant heterogeneity across euro area economies. Since interest rates started to rise, growth has become increasingly uneven (Slide 2).

In some Member States, such as Malta, Spain and Portugal, output has expanded measurably. In Malta, for example, annual real GDP growth has averaged 6% since 2022. In Spain and Portugal, real activity has grown by nearly 4% annually.

In fact, much of the euro area's dismal growth performance since we started raising our key policy rates can be attributed to a small group of countries, including Germany, Finland and Estonia.

If one were to plot growth in the euro area excluding Germany, for example, activity in the currency area would have been remarkably resilient in the face of the sharpest monetary policy tightening in decades and a war raging at the EU's doorstep. Only a few advanced economies, most notably the United States, have expanded at a faster pace during this period (Slide 3).

Monetary policy unlikely to be the key driver of heterogeneity

Monetary policy has probably been one factor contributing to heterogeneity in the euro area. An economy such as Germany's, which is centred around a strong manufacturing base, is likely to be more sensitive to changes in interest rates than more service-oriented economies.

Three observations suggest, however, that monetary policy is unlikely to be the key driver of heterogeneity.

First, output in Germany had started to stagnate well before the rise in interest rates. At the end of 2021, real GDP was only 1% above its level four years earlier, against increases of 4.9% for the euro area excluding Germany and even 10% in the United States over the same period.

In other words, the growth gap was widening already well before we started tightening monetary policy.

Second, we observe significant heterogeneity even in parts of economic activity that are more sensitive to changes in interest rates. In Germany, industrial production (excluding construction) is 10% lower today than it was before market interest rates started to rise in late 2021 – a considerably larger loss than that seen in most other economies (Slide 4, left-hand side).

This contrast becomes even starker when one considers the production of capital goods, which tend to be the most interest-rate sensitive.

Over the past two and a half years, the slowdown in the production of capital goods started earlier and was more pronounced in Germany than in other major euro area economies. Today, capital goods production in Germany is 3% lower than at the end of 2021. By contrast, it remained nearly 17% higher in the Netherlands over the same period (Slide 4, right-hand side).

Third, German households have, on aggregate, so far benefited from the rise in interest rates.

Since the end of 2021, their net interest income has increased sharply, as they shifted their savings into time deposits offering higher returns, while interest rates on long-running, fixed-rate mortgages remained low (Slide 5).

By contrast, the widespread prevalence of flexible-rate mortgages in Spain has led to a notable increase in interest payments that has more than offset the rise in income gained from higher interest rates on savings.

That is, the transmission of monetary policy through some channels, such as the mortgage channel, is likely to have been weaker, not stronger, in Germany than in other countries.

Resilient growth in the south of the euro area

To understand the main drivers behind the heterogeneity, it is necessary to look at both the countries that have grown faster than what might have been expected considering tight policy and those that have been underperforming.

Let me focus first on the more dynamic regions of the euro area.

In many cases, trade played an important role. In Spain, for example, net exports contributed, on average, around 0.4 percentage points to growth every quarter over the past two and a half years.

This is a notable increase from the period preceding the pandemic (Slide 6, left-hand side). The same broad pattern can be observed in Italy and Portugal.

A strong recovery in tourism after the pandemic has been a key factor supporting the rise in exports in these economies. But trade is not the whole story.

Labour market developments played an equally important role. Greece is the most remarkable case. Unemployment fell from 13.7% in early 2022 to 9.9% in July this year, a level not seen since the global financial crisis (Slide 6, right-hand side).

We observe similar improvements in labour markets across the south of the euro area. In Italy, for example, the number of people in employment has expanded by more than one million since 2022, measurably supporting private consumption and confidence.

Finally, in some countries fiscal policy remained more accommodative than in others. In Italy, the government deficit last year was 7.2%, compared with 2.6% in Germany.

Funds allocated under the Next Generation EU programme provided further impetus to growth and employment. In 2022 and 2023, 37% of the funds were allocated to the five fastest-growing countries although their share in the euro area's economy accounted for only 13%.

All in all, in large parts of the single currency area, the impact of tighter monetary policy was weakened by a combination of looser fiscal policy and a shift in consumption towards services. In addition, some of these economies have gone some way towards becoming more resilient through structural reforms after the sovereign debt crisis, which helps explain their overperformance.

While some countries will need to adjust government spending to be in line with the new European fiscal rules, the gradual dialling back of monetary policy restraint since June, together with the continued rise in real incomes, is likely to support growth further over the medium term.

Structural headwinds in export-oriented countries

The gradual moderation in the degree of monetary policy restriction will also support growth in those parts of the euro area that have stagnated in recent years. Construction activity, for example, has contracted by 12% since 2022 in Finland and by nearly 7% in Germany.

While rising costs for equipment and raw materials contributed measurably to the drag in construction, the recent decline in mortgage rates is already translating into rising demand for housing.

A less restrictive policy stance may help reduce risks of negative growth spillovers from the core to the periphery. However, monetary policy is no panacea.

Germany, in particular, is currently facing strong headwinds that will not be resolved by lower interest rates alone. Its business model is built on export-driven growth, focusing on the high-end segment of traditional manufacturing industries.

From 2000 to 2015, Germany's current account turned from a deficit of 1.8% of GDP to a surplus of 8.6% – an unparalleled surge among advanced economies (Slide 7, left-hand side). As a result, net exports accounted for almost one-third of growth over this period.

But on average since 2016, net exports have no longer been contributing to growth, with Germany losing export market shares at a concerning pace (Slide 7, right-hand side). And with domestic demand not stepping up, the German economy has been growing by just 1% on average per year over this period.

Of course, this needs to be seen in the context of the series of shocks in recent years. Germany's growth outcomes were better than feared considering the sheer size of the energy shock. The swift reduction in gas consumption and the rapid switch to alternative energy sources in response to the sudden loss of access to Russian gas have demonstrated the adaptability of the German economy.^[2] And yet, Germany is facing deep-seated challenges.

In fact, the perils of relying on exports as a primary source of growth have long been known. In the two decades up to the pandemic, euro area exporters – and German firms in particular – benefited from exceptionally strong growth in some key markets, especially in China, where a real estate boom fuelled demand for goods exports from the euro area, particularly for capital goods.^[3] ECB staff analysis shows that euro area firms would have lost export market shares at a much faster pace if it had not been for such geographical and sectoral effects, which largely offset parallel losses in price competitiveness related to higher energy and labour costs as well as weaker productivity growth (Slide 8, panel a).

But since the pandemic, competitiveness effects have started to dominate as the special factors boosting euro area exports have slowed, explaining the sizeable drop in export market shares (Slide 8, panel b).^[4]

Export-led growth model may need adjustment

Part of the weakness in exports is likely to be cyclical, reflecting the lagged effects of global monetary policy tightening and the weakness in China.

But there is a risk that the pre-pandemic export-oriented growth model will face more permanent headwinds and require adjustment, for three main reasons.

First, the nature of globalisation is changing. Geoeconomic fragmentation is intensifying, with global trade measures increasing sharply, especially for critical raw materials – the production of which is often concentrated in just a few countries.

As such, the times when globalisation was boosting trade and growth may be behind us. There is evidence that geopolitics is increasingly hampering trade and that firms progressively seek to diversify their supply of strategic goods by sourcing them from producers in geopolitically aligned countries.^[5]

Given that euro area firms are more deeply integrated into global value chains than many of their competitors, fragmentation could hurt the euro area economy more than others.^[6]

Second, the energy shock was a major driver behind the decline in euro area market shares.

Unlike past oil price shocks, which affected firms across the globe, Russia's invasion of Ukraine and the resulting sharp spike in gas prices, was a massive competitiveness shock for the euro area, as the input costs of domestic exporters rose sharply relative to those of their competitors.

As a result, the exports of energy-intensive sectors decreased strongly, accounting for almost the entire decline in total exports in 2023 (Slide 9, left-hand side).^[7]

ECB staff analysis shows that, at the peak of the European gas crisis, the average impact on euro area export market shares was a decline of 7%, with energy-intensive industries experiencing losses of more than 15% in export market shares (Slide 9, right-hand side).

Although energy costs have fallen from their peak, they remain almost four times as high as in the United States (Slide 10, left-hand side). Energy will therefore likely remain a drag on euro area price competitiveness.

Third, competition is changing.

Two decades ago, Chinese firms specialised mainly in the production of low-value goods, such as clothing, footwear or plastic. Today, China is increasingly building up large production capacities in high-value-added industries, such as the automotive and specialised machinery sectors.

China moving up in the value chain is not only directly dampening demand for euro area goods – it is also turning China into a fierce competitor in third markets.

This is particularly visible in Germany and Italy, which over the past two decades have seen a steady increase in the number of sectors in which these economies and China have a revealed comparative advantage – meaning they export more in these sectors than the global average (Slide 10, right-hand side).

With Chinese and euro area firms increasingly competing in similar export markets, China's significant gains in price competitiveness vis-à-vis the euro area are weighing on euro area exports.

Since 2021, China has accounted for the entire appreciation in real effective exchange rate of the euro based on producer prices (Slide 11, left-hand side). While euro area producer prices have increased significantly, Chinese producer prices have remained remarkably stable over the past four years (Slide 11, right-hand side).

On the one hand, this is the result of generous state subsidies that are significantly higher than in most other advanced and major emerging market economies (Slide 12, left-hand side).^[8]

On the other hand, rising overcapacities are weighing on Chinese export prices.^[9] The automotive sector is a case in point. China is making significant upfront investments in production and transport to boost its export capacity.

Orders for new shipping vessels are projected to raise the number of electric vehicles available for exports by 1.7 million annually by 2026 (Slide 12, right-hand side). To put this in perspective, the total number of electric vehicles sold across the EU in 2023 was 2.5 million.

Need for a reform agenda putting innovation and entrepreneurship first

Europe, and Germany in particular, needs to adapt to this new environment. At a time when global economic relationships are becoming more uncertain, Europe needs to regain its competitiveness to protect its standard of living and social values.

Past efforts to regain competitiveness were not without shortcomings. Policies aimed at reducing wage costs, for example, often came with significant economic hardship and social costs.

Today, the focus needs to be a different one. Europe should put innovation and entrepreneurship at the heart of its agenda.

In his recent report, Mario Draghi presents a candid and unsparing diagnosis of the state of the euro area economy and makes many useful proposals.^[10]

Some of those proposals are unlikely to find broad support among political leaders. But it would be wrong to reduce the report to a call for more joint borrowing, which in any case should only be discussed after evaluating the experience with the Recovery and Resilience Facility.

In fact, many reforms that can foster European competitiveness do not need significant upfront investment, nor do they require changes to the EU Treaty.

Let me highlight three areas that I consider most promising.

Creating a European Silicon Valley

First, Europe needs to facilitate the birth and growth of innovative start-ups.

Since 2000, productivity per hour worked has increased by just 0.8% per year on average – only half the growth seen in the United States (Slide 13). European firms' failure to reap the efficiency gains brought about by information and communication technologies is one of the root causes.^[11]

Europe is not short on innovation potential. But its regulatory framework and the lack of deep capital markets make it difficult for young firms to thrive.

Over the past decade, European start-ups have raised funds equivalent to just 0.3% of GDP from venture capital investments, less than a third of the figure for the United States.^[12] Banks do not have the risk-bearing capacity to fill this void, and this would not change even if we managed to revive securitisation in the euro area.

Today, many promising start-ups shift their operations overseas because of a lack of risk capital. In 2022, 58 founders of “unicorns” in the United States – start-ups that went on to be valued over USD 1 billion – had been born in the euro area.

If Europe wants to retain such potential, it needs to make private equity investments more attractive, including by removing the “debt bias” in national tax systems.

Better mobilisation of capital is one way to foster innovation. Strengthening the Single Market, fostering competition and cutting red tape is another.

The European economy remains segmented along national borders, torn between different rules and legal systems. This makes it difficult for young firms to grow into sufficient size and form innovation clusters, so that new ideas and technologies can spread faster and allow them to compete in an environment where “the winner takes most”.

The Single Market is Europe’s most effective tool to mobilise economies of scale and to enable the creation of a European Silicon Valley. However, the level of European integration remains disappointingly low – especially in services, which amount to around 67% of the EU’s GDP. Intra-EU trade in services accounts for only about 15% of GDP, compared with close to 50% for goods.

To a significant extent, this reflects regulatory and administrative barriers to doing business in the euro area that hold back competition and thus innovation.

Green innovation as an engine of growth

Second, Europe needs to leverage the green transition.

Making the European economies more sustainable is not a choice. Weather-related disasters are becoming more frequent and more severe, which requires urgent action to reduce carbon emissions and adapt to the growing impact of climate change.

Embracing the green transition comes with costs for society. Relative price changes are often most painful for those who can least afford it. But the green transition also offers the potential to unlock economic opportunities, especially for those moving first.

This is the spirit of the Porter hypothesis – the view that environmental measures can be an important driver of innovation.^[13] Although controversial, there is ample evidence in favour of the Porter hypothesis.

Consider the automotive industry.

Euro area car producers have lost export market share over the past few years (Slide 14, left-hand side). But these losses were largely confined to the combustion engine segment – in the electric car industry, euro area firms made considerable gains, also by developing hybrid technologies early.

These gains were made possible by significant investments in research and development. According to the most recent data, automotive companies in the euro area still boasted the world's largest investments in research and development in 2022, about twice as much as the United States and China.

The green industry, including low-emission car production, is the only innovative sector where the EU is currently leading in terms of the number of patents (Slide 14, right-hand side).

Technological leadership also allowed euro area firms to raise their export prices on motor vehicles more than others, benefiting from a relatively price-inelastic demand (Slide 15, left-hand side).^[14] As a result, gross value added was typically more resilient than industrial production, as firms moved into higher-margin activities (Slide 15, right-hand side).

In other words, Europe has invested more than other countries in being a frontrunner in the green transition. Now is not the time to backtrack. Europe needs to continue investing in green technologies and innovations to turn the green transition into an engine of growth.

The sooner Europe decarbonises its energy consumption, the faster it will reduce its dependency on foreign suppliers and regain price competitiveness, because the marginal cost of renewable energies is practically zero.

This is all the more important in times of the artificial intelligence revolution, which will significantly increase the demand for energy. At the same time, the adoption of new energy sources, such as hydrogen, may require a transition phase during which not all hydrogen can be generated from renewable energies.

Managing the green transition requires both private and public investments. To foster this process, a mission-oriented industrial policy may be needed that strategically focuses on achieving the green transition through coordinated efforts and thus reduces uncertainty.^[15]

For example, last year France introduced new criteria for granting subsidies to purchase electric vehicles, which privilege supply chains that are entirely green. As China's electric vehicle industry relies heavily on coal-generated electricity, these criteria implicitly favour European production.^[16]

Significant private and public investments are also needed to upgrade Europe's electricity grid and to build new infrastructure, such as pipelines or networks of fuel stations for hydrogen, and these investments need to happen soon if Europe wants to be a leader in new technologies.

The scale of these investments may require new financing ideas. Their costs, and the uncertainty about future payoffs, are often so large that they may not break even over conventional investment horizons.

So, in some cases the resulting risks cannot be borne by entrepreneurs alone, making public-private partnerships a viable option to internalise the externalities arising from climate change. In some cases, this could include exploring options of granting state guarantees as a way for governments to incentivise private firms to invest in green infrastructure and technologies.

Higher labour participation and immigration are indispensable to address labour scarcity

Third, Europe needs to address labour scarcity.

Longer life expectancy and declining fertility will lead to a sharp drop in the euro area's working-age population and a significant increase in the old-age dependency ratio. These developments are most concerning in Italy, where the share in the total population of those aged between 15 and 64 is projected to fall from about 63% today to 55% by 2050 (Slide 16, left-hand side).

Over the past ten years, these strains have partly been cushioned by immigration. But as the baby boomer generation is retiring and migration is expected to moderate, the drag on growth coming from an ageing population is likely to be significant.

New research suggests that, over the next two decades, demographic change may lower annual per capita output growth by more than one percentage point in Italy and by 0.8 percentage points in Germany.^[17]

This comes at a time when a considerable share of firms across the euro area are already reporting acute shortages of labour limiting their business (Slide 16, right-hand side). Despite declining somewhat recently, this share has never been higher than in recent years.

Labour scarcity cuts across society. In many countries, thousands of teacher vacancies are not filled, especially for STEM subjects. There are chronic staff shortages in hospitals and nursing homes.

And all countries are facing a lack of skilled workers in specialised industries. These shortages are likely to dramatically increase as demographic change proceeds and cannot be offset by rising productivity alone.

Europe should therefore do four things to address labour scarcity.

First, it should further increase labour force participation. Significant progress has been made in recent decades, especially by bringing more women and older workers into the labour force. But participation rates remain below those in some other advanced economies.

Second, resources need to be allocated more efficiently. The public sector has played an important role in explaining total employment growth over the past few years.^[18] The health crisis in particular has made some of these developments necessary. But the larger the public sector becomes, the less human capital is available for private firms to expand their productive businesses.

Third, Europe needs to strengthen education. In many euro area countries, a significant share of adults – in some cases more than a third – have not completed upper secondary school. Supporting education will not only unlock the benefits of new technologies. It will also work against demographic headwinds, as higher levels of education tend to lead to higher labour market participation.^[19]

Last, Europe needs to attract foreign workers. Solutions are needed for how to make immigration socially acceptable and how to promote the flow of workers across the single currency area.

Conclusion

Let me conclude.

In recent years, growth in the euro area has become increasingly uneven. While monetary policy may have contributed to rising heterogeneity, it is not the main driver. Rather, structural headwinds are holding back growth in some countries more than in others.

We cannot ignore the headwinds to growth. With signs of softening labour demand and further progress in disinflation, a sustainable fall of inflation back to our 2% target in a timely manner is becoming more likely, despite still elevated services inflation and strong wage growth.

At the same time, monetary policy cannot resolve structural issues.

European governments have a historic responsibility to turn the current challenges into opportunities. Europe has demonstrated in the past that it can adjust and rebound when faced with adversity.

Escaping stagnation requires forceful action at both national and European level. It requires putting innovation and entrepreneurship first by promoting competition and business dynamism.

This means strengthening the Single Market, improving access to private equity capital and reducing burdensome bureaucracy. It means leveraging the green transition to advance innovation and regain price competitiveness. And it means putting in place policies that incentivise labour participation and preserve a skilled workforce through immigration and education.

In all these ways, we can make the euro area stronger.

Thank you.

Annexes

2 October 2024

[Slides](#)

1.

See European Central Bank (2023), "[Global value chains and the pandemic: the impact of supply bottlenecks](#)", *Economic Bulletin*, Issue 2; Emter, L. et al. (2024), "[The energy shock, price competitiveness and euro area export performance](#)", *Economic Bulletin*, Issue 3; De Santis, R.A. (2024), "Supply Chain Disruption and Energy Supply Shocks: Impact on Euro Area Output and Prices", *International Journal of Central Banking*, 20 (2): 193-236.

2.

See also Bachmann et al. (2024), "What if? The Economic Effects for Germany of a Stop of Energy Imports from Russia", *Economica*, Vol. 91, Issue 364, pp. 1157-1200.

3.

See also Fidora, M. and Gunnella, V. (2024), "[Past and future challenges for the external competitiveness of the euro area](#)", *Economic Bulletin*, Issue 6, ECB.

4.

See, for example, IMF (2022), "[Global Trade and Value Chains during the Pandemic](#)" *World Economic Outlook*, Chapter 4, April; and Huang, F. (2020), "[Winning Export Market Share despite the COVID-19 Crisis](#)", *Allianz Research*, October.

5.

See European Central Bank (2024), "[How geopolitics is changing trade](#)", *Economic Bulletin*, Issue 2.

6.

See Attinasi, M. et al. (2023), "[Friend-shoring global value chains: a model-based assessment](#)", *Economic Bulletin*, Issue 2, ECB.

7.

For the effects of high energy costs on production, see European Central Bank (2023), "[How have higher energy prices affected industrial production and imports?](#)", *Economic Bulletin*, Issue 1.

8.

The experience with the solar panel industry in the early 2000s is a testament to the cost advantages that can be achieved with high levels of subsidies. At the time, China began to heavily subsidise its solar panel industry, leading to sharp increases in export market shares and crowding out of European and US manufacturers.

9.

Significant state-owned fixed investments, together with subdued domestic demand, have resulted in excess capacity in China. For example, inventories are rising notably across sectors as output is expanding faster than sales. See Al-Haschimi, A. and Spital, T. (2024), "[The evolution of China's](#)

[growth model: challenges and long-term growth prospects](#)”, *Economic Bulletin*, Issue 5, ECB. Recent survey evidence points in a similar direction. According to the European Chamber of Commerce in China, over one-third of respondents observed overcapacity in their industry and cited overinvestment as the main reason for this. See European Union Chamber of Commerce in China (2024), [Business Confidence Survey](#), 10 May.

10.

Draghi, M. (2024), [The future of European competitiveness](#), September.

11.

Schnabel, I. (2024), “[From laggard to leader? Closing the euro area's technology gap](#)”, inaugural lecture of the EMU Lab at the European University Institute, Florence, 16 February.

12.

Arnold, N.G. et al. (2024), “Stepping Up Venture Capital to Finance Innovation in Europe”, *IMF Working Paper*, No 2024/146.

13.

See Porter, M. E. (1991), “America's Green Strategy”, *Scientific American*, No 264(4), p. 168; Porter, M. and van der Linde, C. (1995), “Toward a New Conception of the Environment-Competitiveness Relationship”, *Journal of Economic Perspectives*, Vol. 9 (4), pp. 97-118; Rubashkina, Y. et al. (2015), “Environmental regulation and competitiveness: Empirical evidence on the Porter Hypothesis from European manufacturing sectors”, *Energy Policy*, Vol. 83, pp. 288-300; and van Leeuwen, G. and Mohnen, P. (2017), “Revisiting the Porter hypothesis: an empirical analysis of Green innovation for the Netherlands”, *Economics of Innovation and New Technology*, Vol. 26:1-2, pp. 63-77.

14.

ECB analyses suggest that units exported from the euro area are less sensitive to changes in car prices compared with the exported units from other main global producers (Japan, United States and Korea) and significantly less sensitive than those from China.

15.

See also Mazzucato, M. (2018), “Mission-oriented innovation policies: challenges and opportunities”, *Industrial and Corporate Change*, Vol. 27, Issue 5, pp. 803–815.

16.

See ACEA (2022), [EU ETS: Auto manufacturers welcome inclusion of road transport to grant fair competition](#), 22 June. Similarly, public support for investments in the manufacturing of strategic equipment is having tangible effects. Germany is expected to become self-reliant in the production of mega car batteries by 2025, producing 12% of the global supply from less than 2% two years ago. See International Energy Agency (2023), [Global EV Outlook 2023](#).

17.

Cooley, T.F. et al. (2024), "Demographic obstacles to European growth", *European Economic Review*, Vol. 169.

18.

See also Consolo, A. and Dias da Silva, A. (2022), "[The role of public employment during the COVID-19 crisis](#)", *Economic Bulletin*, Issue 6, ECB.

19.

Around 80% of people with an undergraduate degree or higher are active in the labour market, compared with less than 50% among those who have not finished a secondary school degree or similar. See Berson, C. and Botelho, V. (2023), "[Record labour participation: workforce gets older, better educated and more female](#)", *The ECB Blog*, 8 November.

CONTACT

European Central Bank

Directorate General Communications

- > Sonnemannstrasse 20
- > 60314 Frankfurt am Main, Germany
- > [+49 69 1344 7455](tel:+496913447455)
- > media@ecb.europa.eu

Reproduction is permitted provided that the source is acknowledged.

Media contacts