



Key Performance Indicators in Pork Production: An International Comparison Using 2024 Data

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This is the seventh in a series of annual reports from the Global Swine Benchmarking project that benchmarks international pork production. The first report was based on 2018 data, and this report updates the analysis for 2024 data. The series of reports documented and described the roller-coaster impact of the 2018 African swine fever virus (ASFV) outbreak in China on the finances of pork producers worldwide. These reports have also spanned the COVID-19 pandemic and ASFV in several other countries in the Global Swine Benchmarking project, including Germany, the Czech Republic, Hungary, Italy, South Korea, and Vietnam. In 2022, global inflation reached its highest level since the mid-1990s. In 2024 and recent years, inflation, the pandemic, supply chain disruptions, a tight labor supply, rising interest rates, and geopolitical uncertainty made the economic environment anything but stable.

Prior reports have consistently shown an impressive level of animal productivity in Denmark and the Netherlands and documented the lowest production costs in Brazil and the USA.

The reports also include estimates of the value of improving key performance indicators in each country and describe the key indicators that drive financial performance. This report also compares changes in key indicators between 2023 and 2024.

The raw data comes primarily from an international benchmarking network known as InterPIG. The representatives of the seventeen participating countries listed in Appendix A come from scientific institutions and extension services of producer organizations and have built the database over several years.¹ Members meet once a year to update and actualize the dataset and ensure accurate cross-country comparisons. They use production and financial data from farm records to measure the countrywide average performance of representative pork farms. Definitions have been standardized across countries using a glossary of terms so, for instance, a "gilt" is defined in the same way in every data set, and carcass weights are adjusted to reflect whether the head is left on or removed. The InterPIG network also functions as a forum for information exchange.

Several key pork-importing countries do not participate in InterPIG. Representative data for four of them, China, Japan, South Korea, and Vietnam, was obtained with help from industry consultants in each country and MSD Animal Health (MSD Animal Health in the United States and Canada) technical, marketing, and sales staff. The intention is to add additional countries in future years.

1. The structure of the InterPIG network means that it is open to members of all important pig producing countries. But, access presupposes that each member contributes all data from his/her country required by the network.

The compiled data for the countries in Asia do not necessarily represent averages for all farms in each country. The data for Japan are for modern commercial farms of various sizes. The data for Vietnam and South Korea are for modern commercial farms of various sizes, free of ASFV. The data for China is for modern, large-scale, single-story, non-filtered farms that were free of ASFV.

While the data for China, Vietnam, and South Korea was representative of farms free of ASFV, several values, such as market pig and feed prices, were significantly affected by the presence of the virus in those countries from 2019 through 2024. Once the Chinese swine herd recovered from ASFV, Chinese pork imports and world pig prices plunged.

Productivity on farms free of ASFV, but where the disease was present in a country, was affected due to changes in the use of animal health products, marketing decisions, the source of gilts for breeding, and other changes made in response to the presence of the virus in each country.

The source of data for the countries in Asia is from published and unpublished farm records and other sources. In some cases, estimates were made from personal communication with consultants familiar with production in each country.

Outline of the Report

This report begins with a look at the raw data. All comparisons are for 2024, and the results are presented in U.S. dollars. Much of the information is available from reports written by InterPIG members, so the value-added here is the inclusion of China, Japan, South Korea, and Vietnam, and the approach we use to compare pig production across countries. Namely, we analyze which factors gave each country a competitive advantage or disadvantage. These calculations, which provide a novel approach to evaluating competitiveness, help us isolate how much advantage or disadvantage each factor conveys to producers in each country.

Year-over-year comparisons were made to compare changes in key indicators between 2023 and 2024. We then calculated the marginal value of changes in key performance indicators.

There is no consensus on how performance should be measured. Breeding companies are interested in performance per breeding female, pig farmers evaluate performance per pig produced, and those interested in international trade measure performance based on the cost to produce a kilogram of pork. We, therefore, present results using all three measures. Our comparison is at the farm level; therefore, we miss a possible source of cost advantage for countries with low wages at the slaughter and processing stages of pork production. Most values are presented based on a breed-to-market system, where the breeding, nursery (rearing), and finishing (fattening) phases are combined. However, some values, such as feed prices, are presented individually for the breeding and wean-to-market (nursery and finishing combined) production phases.

Part 1: The Raw Data

Figure 1 shows the total carcass weight produced per breeding female, the average live weight per pig marketed, and the number of pigs marketed per year. As was true in previous years, Italy had the heaviest live weight and led in carcass weight marketed per breeding female. The Netherlands, Denmark, the Czech Republic, and Germany produced the next highest carcass weight produced per breeding female.

Denmark, the Czech Republic, and the Netherlands all exceeded 30 pigs marketed per female per year. Countries in Asia lagged in productivity and South Korea and China marketed the least carcass weight per breeding female.

Major exporters such as the USA, Canada, and Spain have surprisingly poor animal productivity when compared to Denmark, the Czech Republic, and the Netherlands. Brazil, which is also a major exporter has comparatively favorable productivity to other major exporters with almost 30 pigs marketed per female per year in both Santa Catarina (SC) and Mato Grosso (MT).

Brazil has two data points because of the vast differences between the traditional pig farming state of Santa Catarina and the new frontier in Brazilian pork production, Mato Grosso. Santa Catarina is recognized by the World Organization for Animal Health as free of foot and mouth disease virus (FMDV) without vaccination and is eligible to export to a wide range of countries. In 2023, Mato Grosso was recognized as free of FMDV with vaccination and could only export to a very limited list of importers. In May 2025, the World Organization for Animal Health recognized Brazil as a country free of FMDV without vaccination. These developments will impact market pig prices in Brazil as trade barriers are removed.

Figures 2, 3, and 4 show the revenue, cost, and profit for each country in 2024. The results are presented on a per kg of carcass weight sold, per pig sold, and per breeding female basis in **Figures 2, 3, and 4**, respectively. **Figure 2** (bars) shows that Japan and South Korea had the highest production costs per kg of pork sold. China, Italy, and Vietnam also had very high production costs.

Brazil (MT and SC), Canada, and the USA had the lowest overall costs per kg of pork sold.

During the COVID-19 pandemic in 2020, the Brazilian currency (Real) fell by about 25%, and it has not recovered. Consequently, Brazilian prices expressed in U.S. dollars are lower than they would have been had the value of the Real not fallen relative to the U.S. dollar. Brazil is also free of porcine reproductive and respiratory syndrome virus (PRRSV), the most costly disease in the global swine industry. Consequently, Brazil is now the world's low-cost supplier. In earlier comparisons, the USA was about even or had a slightly lower cost than Santa Catarina.

Figure 2 also shows each country's market pig price (line) and net profit (shaded area). Market pig prices were highest in South Korea, Japan, Vietnam, China, and Italy. Net profit was positive or near breakeven in most of Asia, Europe, the USA, and Brazil, while minor losses were incurred in Finland, Denmark, and Canada.

This generally positive profit situation in Europe in 2024 is a reversal of the results in 2022, when European countries faced considerable losses as Chinese pork output recovered and exports from these countries fell.

However, the combined pressure of high production costs, regulatory compliance costs, and animal disease continue to be a drag on European pig production. The horizontal red line shows the average net profit across all countries, calculated as a simple average of profitability in all countries. This was \$0.20 per kg of pork sold in 2024.

Figure 3 shows that Italy, South Korea, Japan, and China had the highest costs when measured on a per pig sold basis. This reflects the heavy carcass weights, low productivity, and high feed costs in Italy and low productivity and high feed costs in South Korea, Japan, and China.

Figure 4 shows the same data but on a per breeding female basis. Italy and Japan had the highest costs per breeding female. China is more competitive in this measure. As can be seen in **Figure 1**, Chinese breeding females were less productive than in other countries, with the second fewest pigs marketed per breeding female, which explains why China is ranked so poorly in terms of the

cost per pig sold or per kg of carcass weight and yet is more competitive when the cost from breed-to-market is expressed on a per breeding female basis.

Figures 5, 6, and 7 (bars) provide additional detail on the breakdown of costs. Feed made up a large portion of costs in all countries, particularly in Asia. All of the countries in Asia import feed, and their feed markets are at import parity, which is determined by the import price plus tariffs and transport costs.

Low feed costs in Brazil, Canada, and the USA provided these countries with a significant production cost advantage. This advantage was enhanced by lower energy, labor, and fixed costs.

Brazilian fixed costs are low because of a climate that allows for low-cost construction. Brazil also has very low wages at the slaughter and processing level and this advantage is not included in **Figure 5**. Had we been able to include this additional wage cost advantage, Brazil's overall competitiveness would be even greater.

The information in **Figures 5, 6, and 7** can also be expressed in percentage terms available in Appendix B. Each cost component as a percentage of the total cost does not vary when the results are reported on a per kg of carcass weight, per pig sold, or per breeding female basis. Therefore, a single table with the breakdown of costs by component as a percentage of the total cost is provided.

Figure 8 compares feed prices on a dollar per metric tonne basis for feed in the breeding and wean-to-market phases of production. Feed prices were highest in Asia, especially in Japan, China, and Vietnam and lowest in Brazil (MT), Canada, Finland, and the USA. The low feed costs reported for Finland may be due to the prevalence of on-farm feed production.

Countries with lower feed prices also had lower market pig prices.

In general, low feed prices will stimulate production until pig prices fall to equal the cost of production. It is also true that countries with high feed prices erect trade barriers or provide producer subsidies to protect domestic production.

Figure 9 compares labor cost per hour, or wage rate, against labor productivity, measured as the hours of labor used per breeding female for all production phases (breed-to-market). The Netherlands, Denmark, and Sweden had the highest labor cost per hour, and Spain, the Netherlands, and the USA, all major exporting countries, had the highest labor productivity (lowest labor usage).

Vietnam, Brazil, the Czech Republic, and Hungary had low labor productivity (high labor usage) and low hourly labor costs. Brazil (MT and SC) stands out as having extremely low labor costs per hour, which were magnified by the devaluation of the Real in 2020, which remained devalued in 2024.

Generally, the higher the labor cost per hour in a country, the lower the labor usage (higher labor productivity).

Figure 10 shows whole herd feed conversion, which is calculated as kilograms of feed in all phases of production per kilogram of carcass weight sold. Italy, Japan, South Korea, and China performed poorly on this measure. One might have expected that countries with high feed costs would use feed more efficiently, but that is generally not the case. The heavy market weight of pigs in Italy contributes to the country's poor whole herd feed conversion.

Figure 11 shows mortality rates of pigs and breeding females. Birth-to-market mortality is reported as the number of pig deaths from birth-to-market expressed as a percentage of the number of pigs born alive. Spain, South Korea, the USA, Hungary, and Denmark performed poorly on this measure, while producers in Brazil (SC and MT) performed the best. The USA, Spain, Denmark, and Hungary also had relatively high breeding female mortality rates.

Part 2. Sources of Competitive Advantage

Here we explore the factors that gave producers a leg up, measured by profit, over producers in other countries. We did this by setting each country's costs, prices, and productivity to the same value—the simple average for all countries. The only values that varied for each country were those for the factor evaluated. Each factor was evaluated alone, one at a time. Therefore, any differences in profitability are due strictly to the country's differences in the values for that factor. As an example, one of the factors evaluated was feed prices. For that factor, feed prices in the breeding, nursery (rearing), and finishing (fattening) phases of production were set to the values reported for each country. All other values were the same for every country, set to the average value of all countries. For each factor, the relative advantage or disadvantage is measured as the difference in profitability relative to a hypothetical country with average values for the factor evaluated. An advantage (disadvantage) is reported as a positive (negative) contribution to profitability above (below) the hypothetical average country. This data is color-coded with dark green shading representing the greatest advantage and dark red shading the greatest disadvantage.

To reduce the number of figures to evaluate, we present results in a table on a dollars per kg sold basis (**Table 1**). The table is sorted according to the second column, which is each country's overall profit advantage (disadvantage) compared to the average profitability of all the countries in 2024. The results expressed on a per pig sold (**Table C.1**) and per breeding female (**Table C.2**) basis are in Appendix C.

The factors that contributed to the highest relative advantage or disadvantage were market pig prices, feed prices, and productivity. The relative advantage or disadvantage of the other factors evaluated, wage rates, labor productivity, and fixed costs, were lower but still important.

The third column in Table 1 evaluates the contribution of market pig prices to profitability in 2024. South Korea, Japan, and Vietnam benefited from relatively high market pig prices in 2024. Canada, Brazil (MT and SC), Denmark, and the USA lost out in this regard. High market pig prices in South Korea and Japan gave producers there a respective US\$1.70 and US\$1.52 per kg of carcass weight advantage over a country with average market pig prices. South Korea's advantage over Brazil (MT) was US\$2.24, since Brazil (MT) had a US\$0.54 disadvantage relative to the average. This means that, if somehow producers in South Korea and Brazil (MT) were made equal by every measure except market pig prices, with the same costs, same productivity, etc., producers in South Korea would have earned US\$2.24 per kg of carcass weight more than those in Brazil (MT) in 2024 because of the higher market pig prices they received.

The fourth column in Table 1 provides the same comparison for feed prices. Brazil (MT), Canada, Finland, and the USA benefited from low feed prices, while countries in Asia fared poorly on this measure. Low feed prices in Brazil (MT) gave producers there a US\$0.51 per kg of carcass weight advantage over a country with average feed prices. Producers in Japan had the highest feed prices, placing them at a US\$0.70 per kg carcass weight disadvantage to a country with average feed prices.

The fifth column in Table 1 evaluates the importance of genetics, health, nutrition, and animal husbandry (i.e., productivity in breeding, nursery (rearing), and finishing (fattening)). Denmark, the Czech Republic, the Netherlands, and Ireland led while South Korea, Japan, Italy, and China lagged. Producers in Denmark had the highest productivity, giving them a US\$0.30 per kg of carcass weight advantage over a country with average productivity. Producers in South Korea were at a US\$0.66 per kg of carcass weight disadvantage to a country with average productivity.

The sixth column in Table 1 evaluates the impact of fixed costs, which are determined primarily by building costs, estimated lifetime of buildings and equipment, and maintenance costs, on relative profitability. Low fixed costs provided the greatest competitive advantage to producers in Japan, China, Brazil (MT and SC), and Spain. Higher fixed costs provided the largest competitive disadvantage to producers in Italy, Austria, and South Korea.

The seventh column in Table 1 evaluates labor productivity, measured as the labor hours used for all production phases (breed-to-market). The Netherlands, the USA, France, and Spain performed well under this measure, while Vietnam, the Czech Republic, and Brazil (MT and SC) lagged.

The eighth column in Table 1 shows the other part of the labor equation by comparing the cost of labor per hour or wage rate. Countries with low labor productivity, including Vietnam, Brazil (MT and SC), and China had low wage rates. The Netherlands, Denmark, and Sweden had the highest wage rates, providing producers in those countries the greatest competitive disadvantage to producers in other countries. To evaluate labor costs, labor productivity and wage rate are evaluated together (ninth column). Vietnam fared well on this measure because very high labor usage was more than offset by the low cost of labor per hour in that country. Brazil (MT and SC) and China also fared well, and the Czech Republic, Italy, Austria, Finland, and Japan did poorly. Producers in the state of Santa Catarina in Brazil had the lowest labor costs, giving them a US\$0.11 per kg of carcass weight advantage over a country with average labor costs.

Part 3. Year-over-Year Comparisons 2024 versus 2023

Table 2 compares several key productivity and financial measures between 2023 and 2024. China, Canada, Brazil (MT), and Denmark had the largest increase in total carcass weight marketed per female. For China and Brazil (MT), this was mainly due to a significant increase in the slaughter weight and number of pigs marketed. Canada's changes from 2023 to 2024 may be due, at least in part, to a change in the data sample used. While changing the data source can improve the representativeness of the data and consistency of reporting going forward, it can also make year-over-year comparisons of the data challenging. The net profit measures on the right-hand side of **Table 2** show that 2024 was a good year in Asia compared to 2023, and a bad one in Belgium and the Netherlands.

The simple average of the change in profitability across all countries was a positive US\$0.18 per kg of carcass weight as feed prices fell in every country and market pig prices increased in about half the countries and only fell modestly in the others.

Part 4. Marginal Values of Key Performance Indicators

When producers in any country consider changes in feed diets, genetics, or animal health interventions to improve productivity, they frequently conduct some type of cost-benefit analysis, whether formal or informal. This is not easy because the value of productivity improvements depends on market pig prices, feed prices, fixed costs, and other factors and, therefore, will vary over time and from one country to another. For example, what is the value of reducing mortality from wean-to-market by one percent? The answer is different for each country depending on the market pig prices, feed prices, fixed costs, and other factors for that country in 2024. The results reported in this section are intended to help producers make better cost-benefit calculations for decision-making, such as whether to use a vaccine or an antimicrobial to reduce disease and improve productivity.

The model used for this analysis links all phases of production from breeding to market. We can, therefore, change any productivity measure and calculate the impact on profits from breed-to-market. To operationalize this, we incrementally changed litters farrowed per female per year by 0.05, pigs born alive per litter farrowed by 0.25, pre-wean mortality and wean-to-market mortality by a negative one-percentage point, average daily gain by 0.01 kg per day, and feed conversion by a negative 0.025 kg of feed per kg of gain. To isolate the impact of each, incremental changes in these key productivity measures were made individually, with all other factors remaining at their original values for each country. The outcome is the benefit, measured as the marginal increase in profitability, given the incremental change in the key productivity measure. The results for each country are summarized in [Table 3](#).

The differences between countries are substantial. A 0.25 pig increase in the number of pigs born alive per litter farrowed in South Korea, for example, yielded a marginal increase in profit of US\$57.70 per breeding female per year. In Canada, the same incremental improvement in pigs born alive per litter farrowed yielded a marginal increase in profit of only US\$17.24 per breeding female per year. This has significant implications for resource allocation and investment decisions made by producers. To break even, a producer in South Korea could spend US\$57.70 on an intervention to get a 0.25 pig increase in the number of pigs born alive per litter farrowed, while producers in the Canada, could only spend US\$17.24 to get the same 0.25 pig increase in the number of pigs born alive per litter farrowed.

The degree to which an increase in all of the key productivity measures, except the wean-to-market feed-to-gain ratio, will increase profit is a function primarily of 1) fixed costs, 2) market pig prices, and 3) feed prices (the main variable cost).

When market pig prices are high relative to feed prices, the profit earned on each pig or kg of pork sold is relatively high.

The marginal value of weaning extra pigs, lowering mortality, or increasing average daily gain to increase the kg of pork sold is greater when raising pigs is already profitable. As the number of pigs weaned and kg of pork sold goes up, the incremental increase in profitability will be greater in countries with higher fixed costs since those higher fixed costs are spread over more pigs, i.e., economies of scale. The extent to which an increase in the wean-to-market feed-to-gain ratio will increase profit per pig sold depends on feed prices and the weight of pigs at market.

The marginal value of improving the feed-to-gain ratio is highest when feed prices are high and when pigs are marketed at heavier weights.

Conclusions

The questions that continue to motivate this work are, who are the world's best pork producers and why? How can competitiveness best be measured? What is the value of improving key performance indicators in each country, and what are the key factors that drive financial performance? The answer to these questions is that it depends.

If we compare pork producers based on profitability, as we do when we evaluate companies, then Vietnam, Brazil, South Korea, Spain, Sweden, Japan, and Italy come out on top in 2024.

If we use animal husbandry and productivity as a performance measure, then Denmark, the Czech Republic, and the Netherlands rank at the top.

Using production costs as a metric, Brazil is the most competitive, followed by Canada and the USA. This latter measure makes most sense if we are interested in trade in pork meat.

The source of the competitiveness of producers in the USA is not just cheap feed. The USA has high labor productivity even though the cost of labor per hour is below that of countries that use similar amounts of labor. The USA also has low fixed costs. However, relatively low productivity in the USA is a persistent competitive disadvantage for producers there. Understanding the competitive advantages and disadvantages of countries is an ongoing pursuit. Changes occur annually as country-specific situations change (e.g., policy directives, disease outbreaks), and global market conditions evolve.

Acknowledgments

This Global Swine Benchmarking project is funded by MSD Animal Health (MSD Animal Health in the United States and Canada). The authors thank Hongyao Lin and Leonardo Ellerma with MSD Animal Health in Asia Pacific and Sub-Saharan Africa for their assistance in collecting data for the countries in Asia. Data for the Asian countries were provided by Kyoko Akashi (MSD Animal Health, Japan); Itsuro Yamane (AgrilINFO Co., Ltd., Japan); Di Gao (MSD Animal Health, China); Dr. Lê Thanh Hiền (Nong Lam University HCMC, Vietnam); and Dr. Sungwon Park (HanByol Farmtech, South Korea).

Figure 1. Total carcass weight produced per breeding female, average live weight, and number of pigs marketed—2024

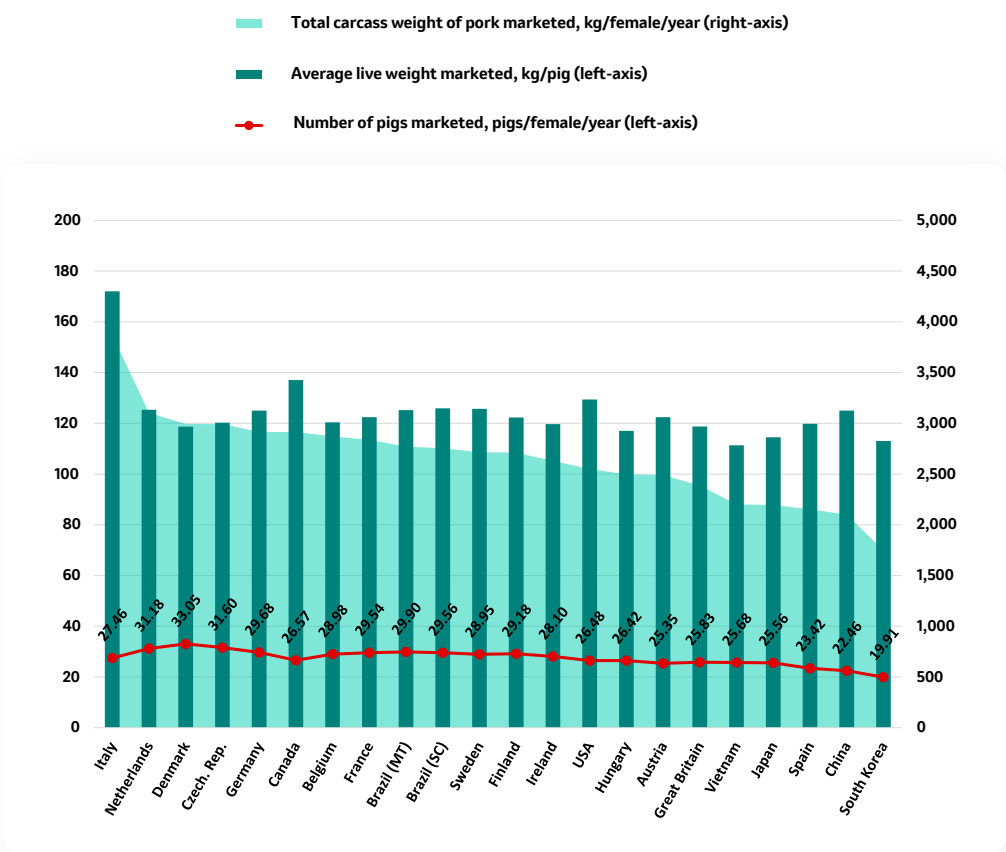


Figure 2. Revenue, cost, and profit per carcass kg sold - 2024.

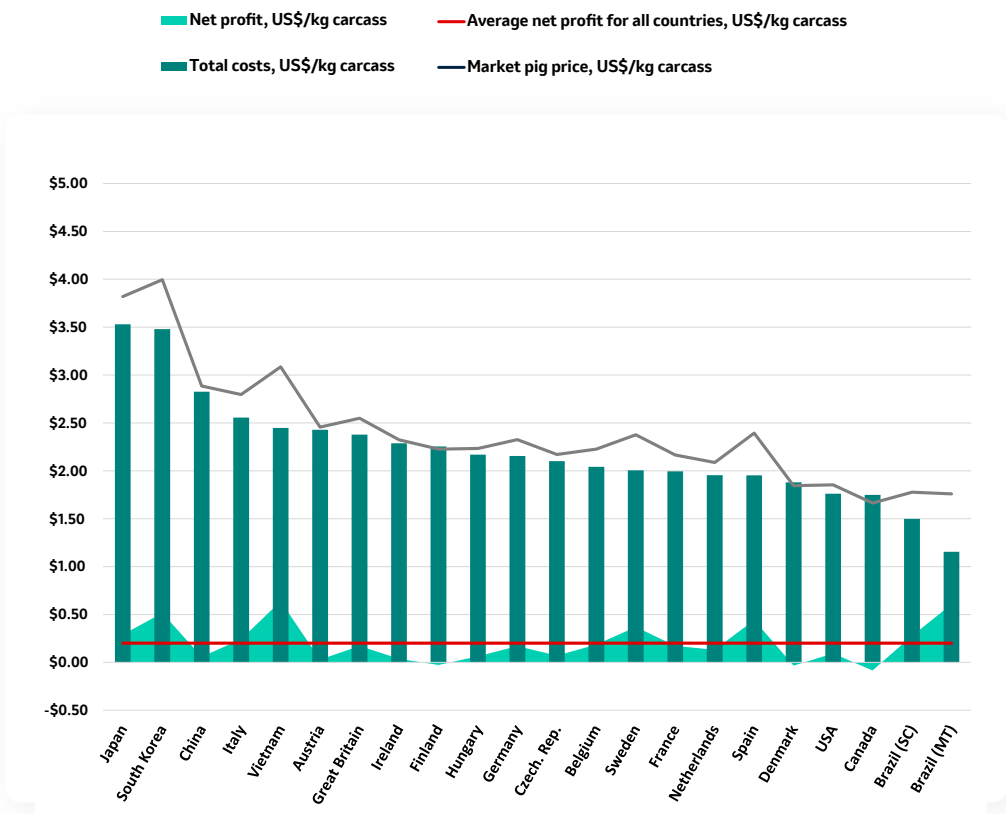


Figure 3. Revenue, cost, and profit per pig sold-2024.

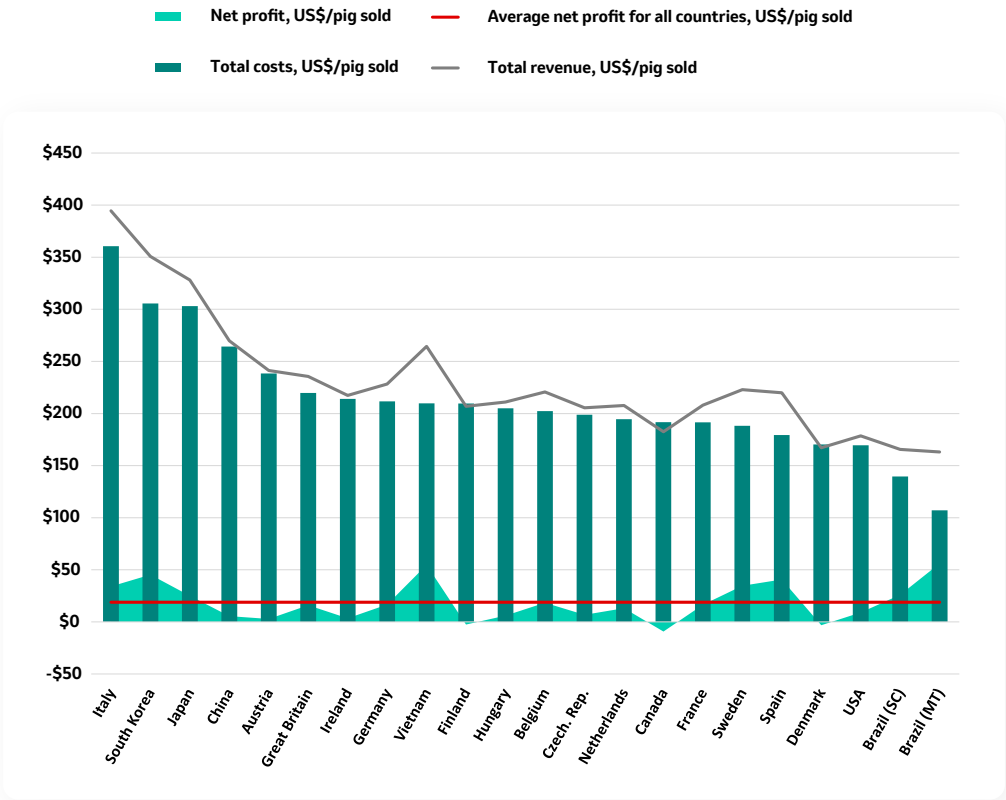


Figure 4. Revenue, cost, and profit per breeding female - 2024.

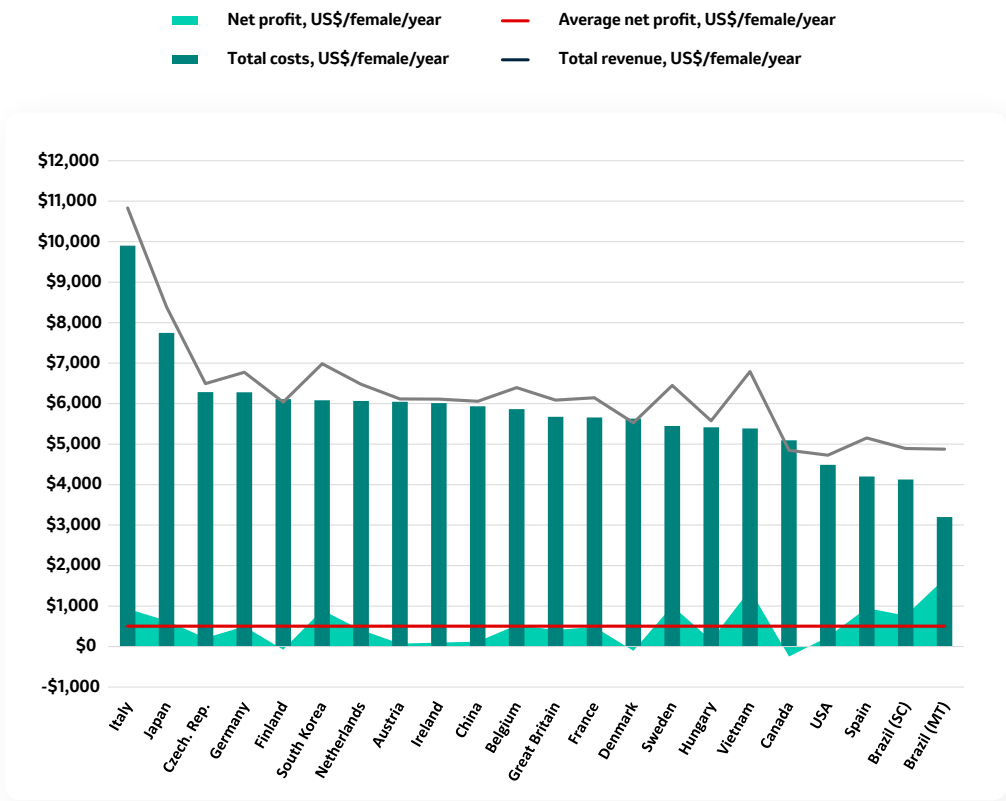


Figure 5. Detailed costs per carcass kg sold-2024.

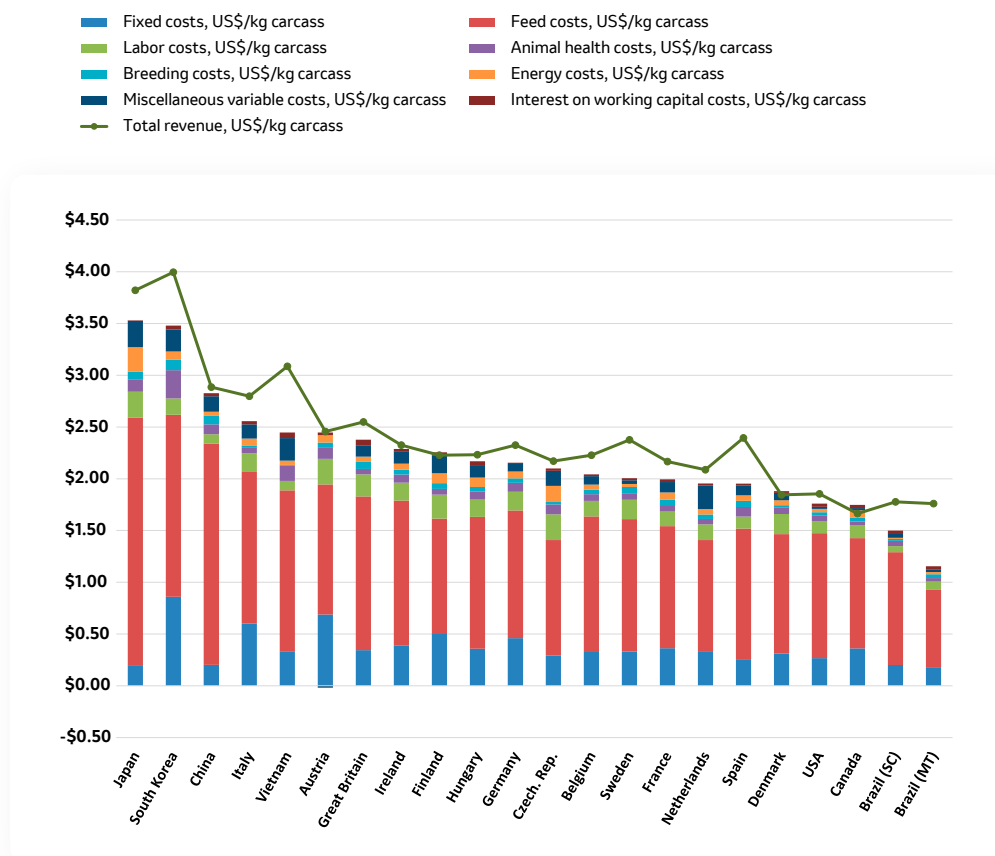


Figure 6. Detailed costs per pig- 2024.

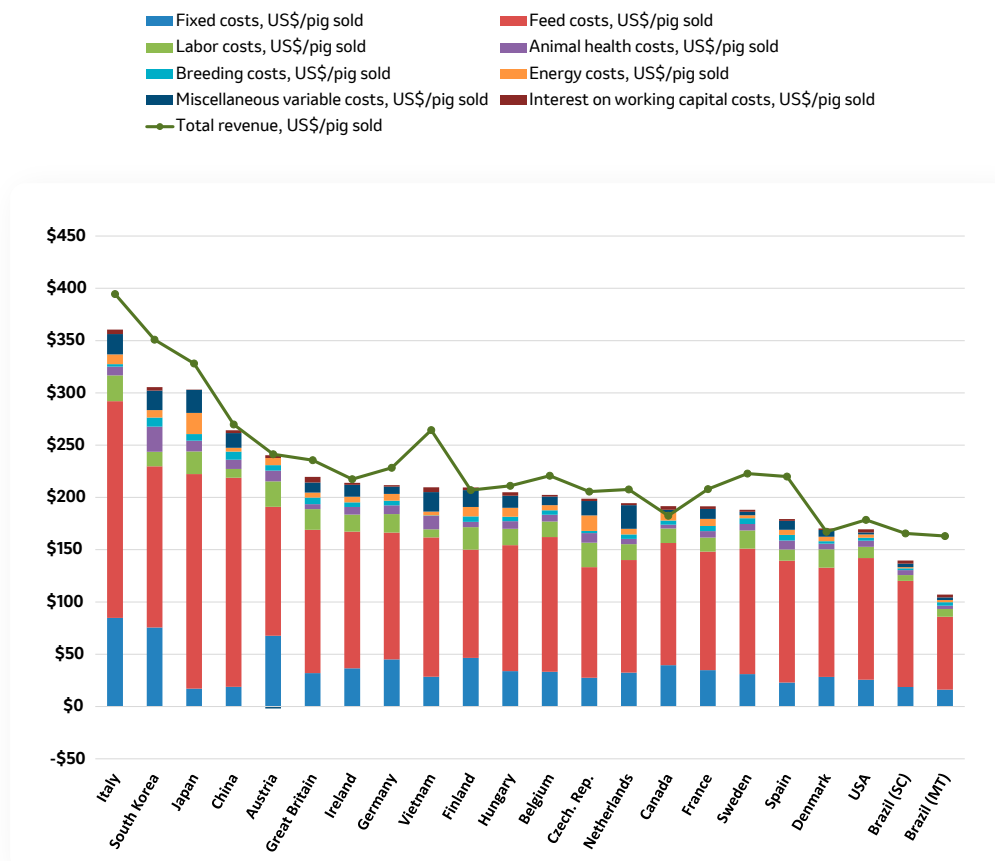


Figure 7. Detailed costs per breeding female -2024.

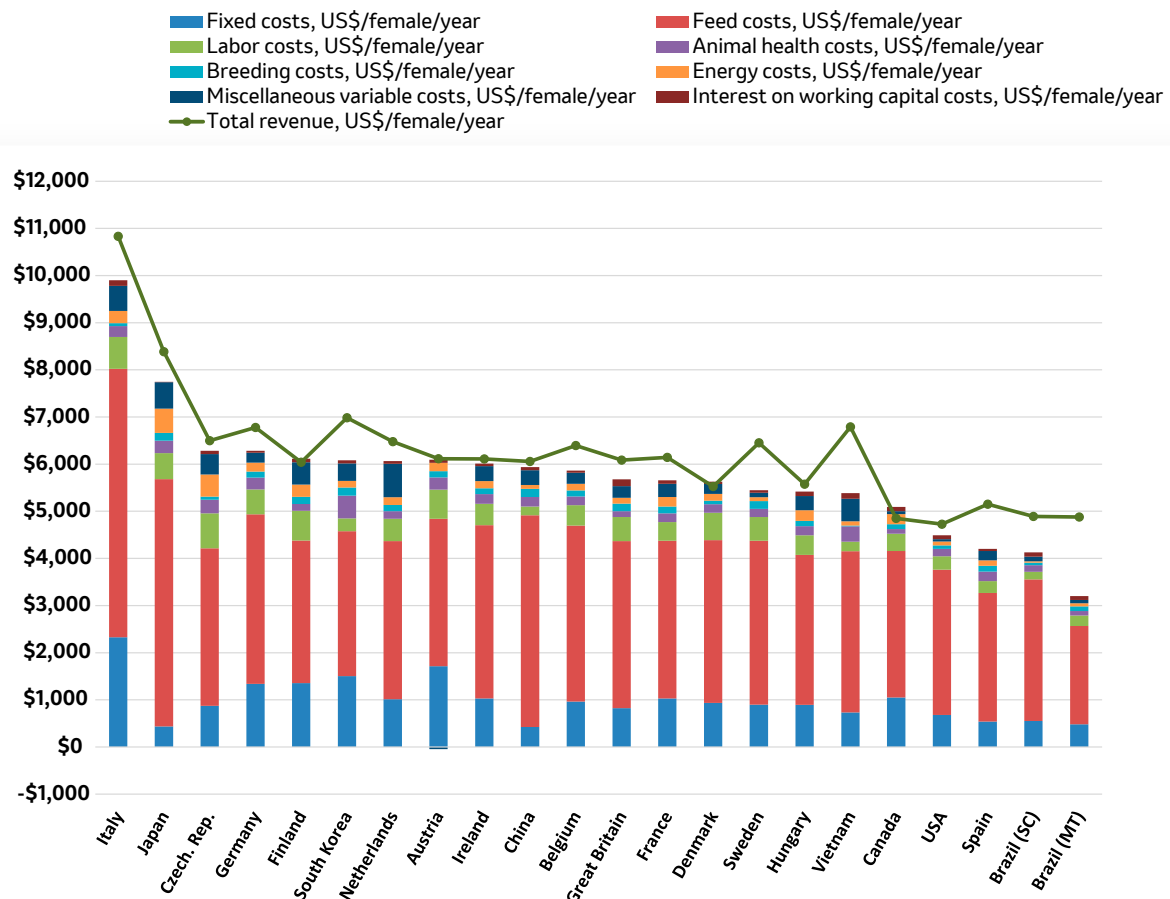


Figure 8. Feed costs by phase of production and market pig prices- 2024.

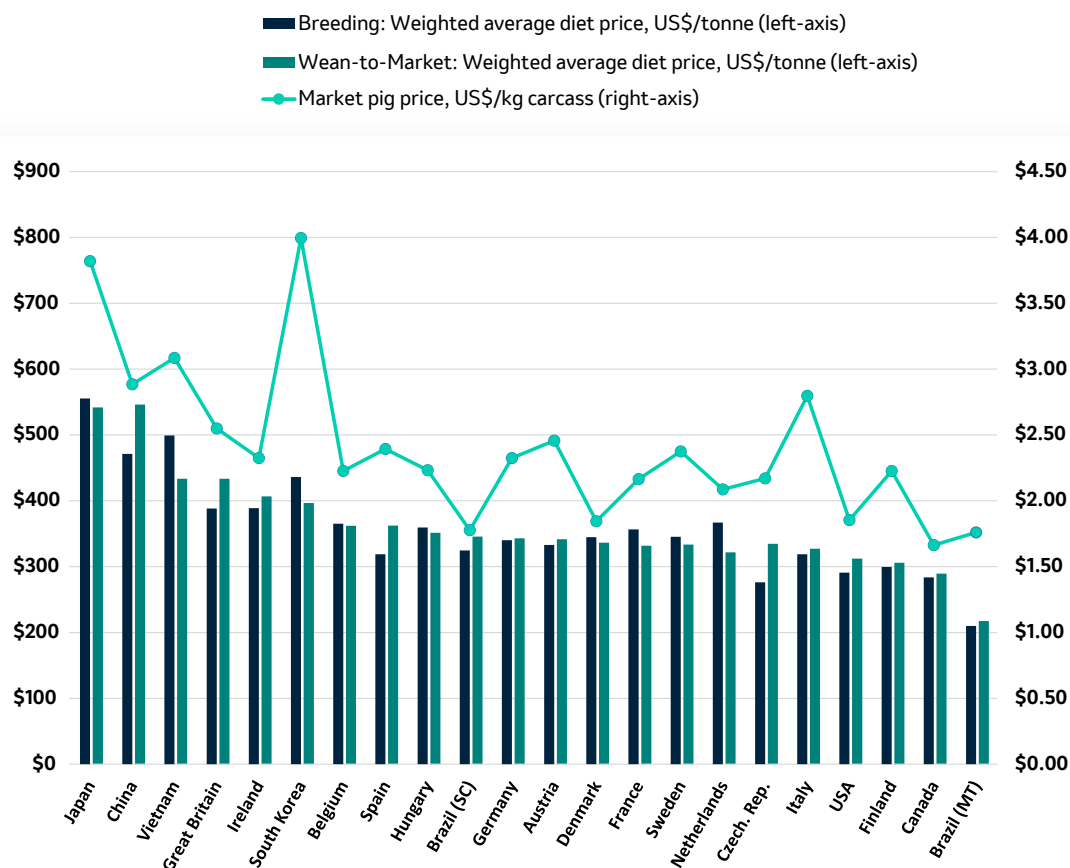


Figure 9. Labor usage and cost-2024.

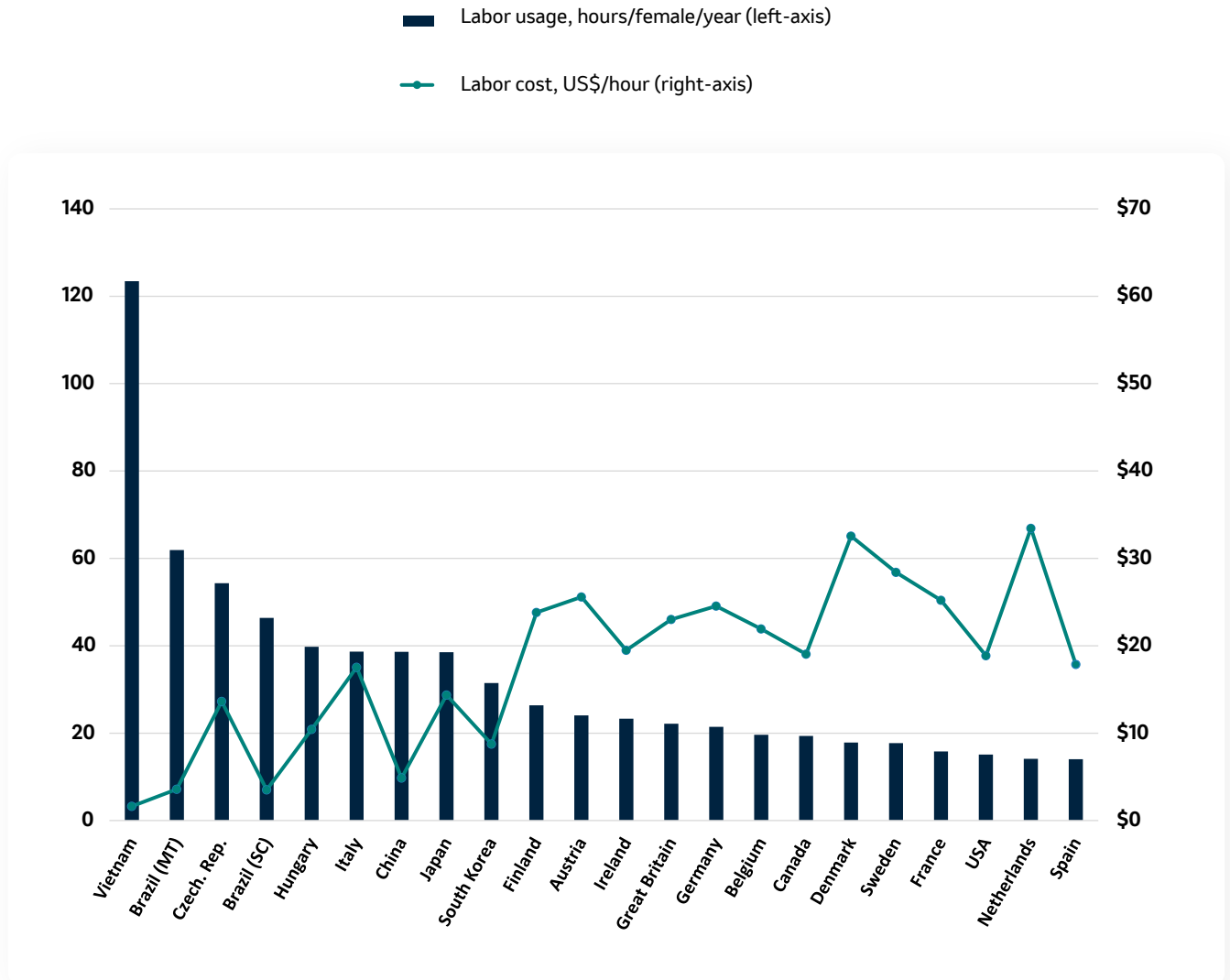


Figure 10. Whole herd feed conversion 2024.

■ Whole herd feed conversion from breed-to-market, kg feed/kg carcass

— Average whole herd feed conversion for all countries, kg feed/kg carcass

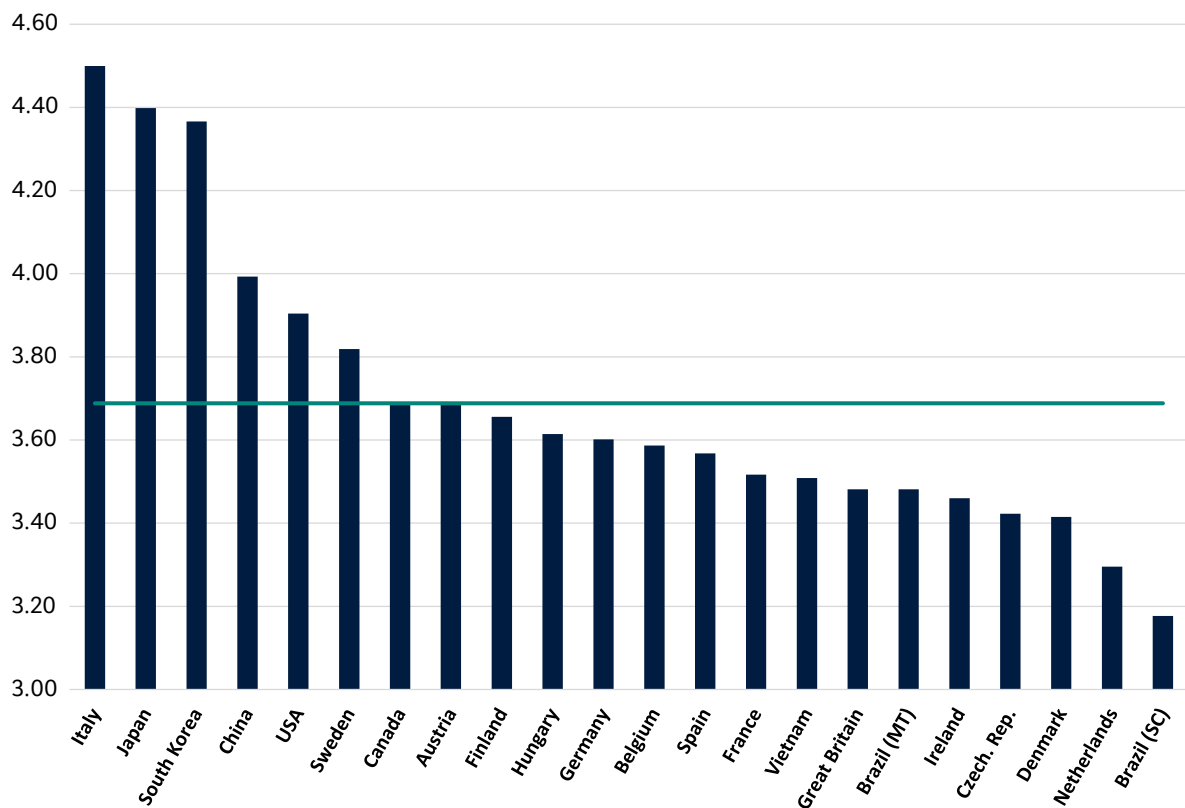


Figure 11. Mortality rates-2024.

- Birth-to-market pig mortality (% of pigs born alive)
- Breeding female mortality rate (% of inventoried females/year)
- Average Birth-to-market pig mortality (% of pigs born alive)
- Average Breeding female mortality rate (% of inventoried females/year)

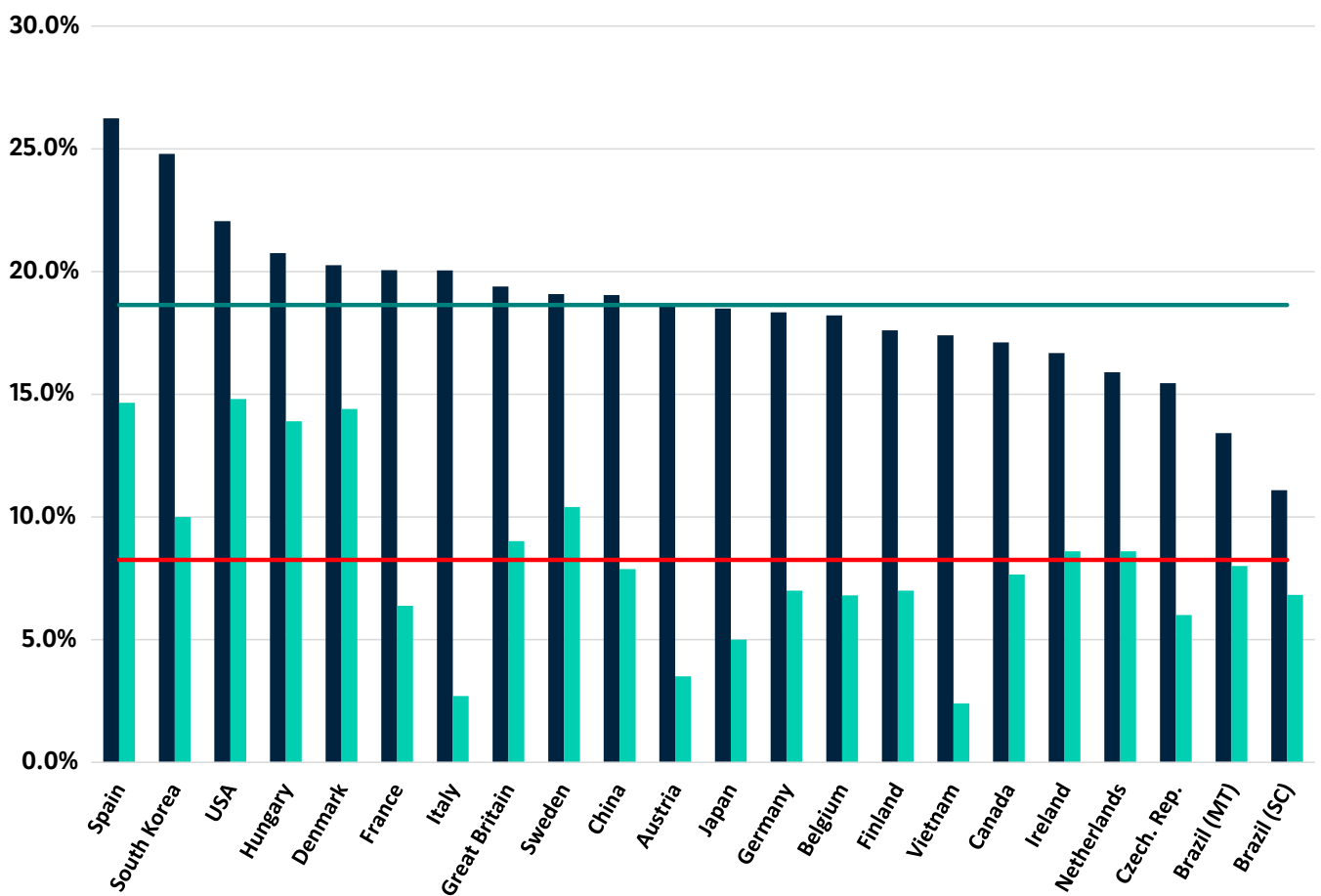


Table 1. Profit advantage of select factors, all other variables held constant, US\$ per carcass kg sold basis, 2024

Country	Profit advantage over average	Market pig prices	Feed prices	Productivity	Fixed costs	Labor usage	Wage rates	Labor Usage & Wage Rates
Vietnam	\$0.44	\$0.79	-\$0.37	-\$0.30	\$0.07	-\$0.67	\$0.22	\$0.09
Brazil (MT)	\$0.40	-\$0.54	\$0.51	\$0.09	\$0.18	-\$0.21	\$0.19	\$0.09
South Korea	\$0.31	\$1.70	-\$0.19	-\$0.66	-\$0.31	-\$0.07	\$0.13	\$0.04
Spain	\$0.24	\$0.10	-\$0.03	-\$0.24	\$0.13	\$0.09	\$0.02	\$0.07
Sweden	\$0.17	\$0.08	\$0.08	\$0.08	\$0.03	\$0.07	-\$0.12	-\$0.02
Japan	\$0.09	\$1.52	-\$0.70	-\$0.65	\$0.18	-\$0.08	\$0.06	-\$0.05
Brazil (SC)	\$0.08	-\$0.52	\$0.03	\$0.18	\$0.16	-\$0.11	\$0.19	\$0.11
Italy	\$0.04	\$0.50	\$0.07	-\$0.34	-\$0.51	-\$0.07	\$0.02	-\$0.09
Belgium	-\$0.02	-\$0.07	-\$0.04	-\$0.03	\$0.01	\$0.06	-\$0.04	\$0.01
Great Britain	-\$0.03	\$0.25	-\$0.24	\$0.08	\$0.04	\$0.04	-\$0.05	-\$0.03
France	-\$0.03	-\$0.13	\$0.08	\$0.09	-\$0.01	\$0.09	-\$0.08	\$0.02
Germany	-\$0.03	\$0.03	\$0.05	\$0.10	-\$0.12	\$0.05	-\$0.07	-\$0.02
Netherlands	-\$0.07	-\$0.21	\$0.09	\$0.24	\$0.01	\$0.10	-\$0.18	\$0.00
USA	-\$0.11	-\$0.44	\$0.14	-\$0.19	\$0.10	\$0.09	\$0.00	\$0.06
Czech. Rep.	-\$0.13	-\$0.13	\$0.13	\$0.25	\$0.06	-\$0.15	\$0.07	-\$0.09
Hungary	-\$0.14	-\$0.06	\$0.00	\$0.05	\$0.02	-\$0.08	\$0.11	\$0.01
China	-\$0.14	\$0.59	-\$0.65	-\$0.33	\$0.17	-\$0.10	\$0.18	\$0.09
Ireland	-\$0.16	\$0.03	-\$0.13	\$0.23	-\$0.02	\$0.03	\$0.00	\$0.00
Austria	-\$0.17	\$0.16	\$0.07	-\$0.02	-\$0.32	\$0.02	-\$0.08	-\$0.07
Finland	-\$0.23	-\$0.07	\$0.21	\$0.16	-\$0.13	\$0.02	-\$0.06	-\$0.06
Denmark	-\$0.24	-\$0.45	\$0.08	\$0.30	\$0.05	\$0.08	-\$0.17	-\$0.03
Canada	-\$0.29	-\$0.63	\$0.24	-\$0.04	-\$0.04	\$0.06	\$0.00	\$0.03

Table 2. Year-over-year comparisons of key indicators, 2024 vs. 2023.

Country	Total carcass weight of pork marketed (kg/female/year)	Average live weight marketed (kg/pig)	Number of pigs marketed (pigs/female/year)	\$ /kg carcass weight			
				Net profit	Market pig price	Total cost	Total feed cost
Vietnam	197.48	0.44	1.69	0.75	0.12	-0.63	-0.68
Japan	19.85	0.56	0.72	0.56	0.15	-0.39	-0.33
South Korea	13.44	1.36	1.98	0.52	0.10	-0.42	-0.38
China	35.04	3.58	3.95	0.50	0.06	-0.44	-0.35
Brazil (MT)	71.61	2.24	2.37	0.39	0.21	-0.18	-0.20
Sweden	96.84	0.79	0.73	0.32	0.08	-0.23	-0.13
Brazil (SC)	50.49	0.02	-0.03	0.31	0.15	-0.16	-0.16
Canada	18.43	1.35	0.37	0.21	0.04	-0.18	-0.21
USA	56.55	0.45	0.53	0.21	0.08	-0.13	-0.12
Hungary	203.49	-2.09	-1.88	0.14	-0.25	-0.38	-0.12
Ireland	77.12	0.10	0.07	0.13	-0.04	-0.17	-0.17
Finland	95.04	0.84	0.85	0.07	-0.09	-0.16	-0.17
Czech. Rep.	23.35	0.25	0.26	0.06	-0.19	-0.25	-0.20
Spain	47.92	0.37	0.23	0.03	-0.20	-0.23	-0.24
Austria	15.22	-0.05	-0.02	0.01	-0.16	-0.17	-0.23
Italy	0.00	0.00	0.00	0.01	-0.10	-0.11	-0.18
Germany	33.51	0.13	-0.01	0.00	-0.12	-0.12	-0.16
France	92.70	0.72	0.73	-0.02	-0.22	-0.20	-0.19
Denmark	44.16	0.81	0.80	-0.04	-0.23	-0.19	-0.17
Great Britain	30.47	0.23	0.17	-0.04	-0.02	0.03	-0.04
Netherlands	71.66	0.47	0.53	-0.09	-0.21	-0.12	-0.10
Belgium	158.77	-1.69	-1.56	-0.14	-0.13	0.01	-0.05
Average	58.30	0.49	0.57	\$0.18	-\$0.04	-\$0.22	-\$0.21

Table 3. Marginal value of incremental changes in key productivity indicators (KPI), * 2024

	US \$/breeding female/year			US\$/pig placed		
	Litters farrowed / female / year	Pigs born alive / litter farrowed	Prewean mortality (% of pigs born alive)	Wean-to-market Mortality (% of pigs placed)	Wean-to-market Average daily gain (kg / day)	Wean-to-market Feed-to-gain ratio (kg feed / kg gain)
Increment	0.05	0.25	-1.0%	-1.0%	0.01	-0.025
South Korea	\$66.70	\$57.70	\$32.15	\$1.92	\$2.71	\$0.96
Italy	\$45.85	\$38.45	\$25.45	\$1.48	\$2.71	\$1.30
Vietnam	\$51.43	\$48.04	\$26.96	\$1.37	\$2.01	\$1.08
Japan	\$44.90	\$40.22	\$24.05	\$1.47	\$2.00	\$1.39
Sweden	\$54.21	\$38.35	\$29.04	\$1.19	\$1.19	\$0.96
Brazil (MT)	\$53.97	\$44.63	\$28.50	\$1.07	\$1.13	\$0.64
Spain	\$45.93	\$35.15	\$23.83	\$1.23	\$1.41	\$0.95
Great Britain	\$44.71	\$33.15	\$22.33	\$1.17	\$1.26	\$1.17
Austria	\$40.21	\$33.85	\$21.44	\$1.10	\$1.57	\$0.96
Germany	\$44.29	\$32.24	\$23.72	\$1.05	\$1.40	\$0.99
France	\$43.09	\$31.97	\$23.69	\$1.02	\$1.29	\$0.93
Belgium	\$40.43	\$30.44	\$21.32	\$1.03	\$1.35	\$0.99
Netherlands	\$40.06	\$29.30	\$21.18	\$0.91	\$1.34	\$0.93
Czech. Rep.	\$41.14	\$29.42	\$21.21	\$0.92	\$1.19	\$0.92
Ireland	\$37.19	\$26.68	\$18.38	\$0.97	\$1.11	\$1.11
China	\$27.24	\$24.41	\$13.68	\$1.16	\$1.00	\$1.54
Hungary	\$34.77	\$26.64	\$18.75	\$0.95	\$1.19	\$0.95
Finland	\$33.85	\$24.63	\$17.77	\$0.83	\$1.25	\$0.86
Brazil (SC)	\$34.01	\$28.25	\$17.34	\$0.85	\$0.75	\$1.02
USA	\$25.89	\$21.75	\$14.43	\$0.83	\$0.81	\$0.92
Denmark	\$29.76	\$18.02	\$15.52	\$0.72	\$0.76	\$0.91
Canada	\$19.77	\$17.24	\$10.61	\$0.72	\$0.89	\$0.93
Average	\$40.88	\$32.30	\$21.42	\$1.09	\$1.38	\$1.02

*The marginal value of the incremental changes in KPI is measured as the change in profit as each KPI is changed by the increment indicated while holding all other values constant. Breed-to-wean values are reported on a per breeding female per year basis and wean-to-market values are reported on a per pig placed basis.

Appendix A. InterPig membership

InterPIG is a collaborative network involving the following organizations and countries:

Austria – VLV Upper Austria

Belgium – Flemish Government and Boerenbond Belgie

Brazil (Two data sets: Mato Grosso (MT) and Santa Catarina (SC)) – Embrapa Swine and Poultry

Canada – Canadian Pork Council

Czech Republic – Institute of Agricultural Economics and Information (UZEI)

Denmark – SEGES

Finland – Atria

France – IFIP

Germany – Thuenen Institute and Interessengemeinschaft der Schweinehalter (ISN)

Great Britain – Agriculture and Horticulture Development Board (AHDB)

Hungary – AKI Research Institute of Agricultural Economics

Ireland – Teagasc

Italy – Research Centre for Animal Production (CRPA)

Netherlands – Wageningen Economic Research

Spain – SIP Consultors

Sweden – Svenska Pig

USA – Iowa State University and Ever.Ag

Appendix C. Sources of competitive advantage on a per pig sold and per female basis.

Table C1. Profit advantage of select factors, all other variables held constant, per pig sold basis, 2024.

Country	Profit advantage over average (\$/pig sold)	Market pig prices	Feed prices	Productivity	Fixed costs	Labor usage	Wage rates	Labor Usage and Wage Rates
Brazil (MT)	\$37.17	-\$50.81	\$47.98	\$5.97	\$17.33	-\$19.73	\$18.31	\$8.20
Vietnam	\$35.83	\$74.60	-\$35.08	-\$28.25	\$6.65	-\$63.62	\$20.61	\$8.30
South Korea	\$26.37	\$160.73	-\$17.87	-\$57.02	-\$29.72	-\$6.47	\$12.20	\$3.80
Spain	\$21.74	\$9.20	-\$2.95	-\$24.58	\$12.76	\$8.30	\$1.45	\$6.16
Sweden	\$15.82	\$7.45	\$7.91	\$9.28	\$3.14	\$6.90	-\$11.00	-\$1.72
Italy	\$15.10	\$47.35	\$6.26	-\$33.53	-\$48.31	-\$6.57	\$1.83	-\$8.29
Brazil (SC)	\$7.03	-\$49.24	\$3.15	\$16.80	\$14.88	-\$10.23	\$18.37	\$10.19
Japan	\$6.06	\$144.16	-\$65.78	-\$54.72	\$17.51	-\$7.25	\$5.59	-\$4.47
Belgium	-\$0.52	-\$6.62	-\$3.72	-\$6.02	\$1.02	\$5.82	-\$3.35	\$0.94
Germany	-\$2.19	\$2.69	\$4.95	\$8.49	-\$11.18	\$4.86	-\$6.45	-\$2.15
France	-\$2.41	-\$12.47	\$7.74	\$5.72	-\$0.94	\$8.17	-\$7.24	\$2.04
Great Britain	-\$2.96	\$23.89	-\$22.28	\$5.85	\$3.73	\$3.42	-\$4.64	-\$2.89
Netherlands	-\$5.70	-\$19.84	\$8.84	\$23.05	\$1.22	\$9.49	-\$16.95	\$0.05
USA	-\$9.90	-\$41.94	\$13.42	-\$20.54	\$9.23	\$8.19	\$0.26	\$5.51
Czech. Rep.	-\$12.15	-\$11.91	\$12.24	\$27.36	\$5.51	-\$14.29	\$6.43	-\$8.86
Hungary	-\$12.84	-\$6.06	\$0.03	\$3.54	\$1.48	-\$7.76	\$10.21	\$0.74
China	-\$13.39	\$55.67	-\$61.22	-\$32.74	\$16.53	-\$9.22	\$16.78	\$8.34
Ireland	-\$15.41	\$2.62	-\$12.42	\$25.81	-\$2.02	\$3.29	-\$0.47	-\$0.18
Austria	-\$16.06	\$15.13	\$6.34	-\$3.40	-\$29.93	\$2.01	-\$7.69	-\$7.02
Finland	-\$21.43	-\$6.60	\$19.71	\$16.86	-\$12.25	\$1.69	-\$5.58	-\$5.85
Denmark	-\$22.01	-\$42.73	\$7.54	\$33.70	\$4.46	\$7.49	-\$15.89	-\$3.18
Canada	-\$28.15	-\$59.94	\$22.24	-\$6.89	-\$4.16	\$5.41	\$0.04	\$2.44

Appendix B. Breakdown of total costs by component, 2024.

Country	Fixed costs	Feed cost	Labor costs	Animal health costs	Breeding costs	Energy costs	Miscellaneous variable costs	Interest on working capital costs
Japan	5.6%	67.7%	7.1%	3.4%	2.1%	6.7%	7.2%	0.1%
South Korea	24.7%	50.5%	4.5%	7.9%	2.9%	2.3%	6.1%	1.1%
China	7.1%	75.6%	3.2%	3.4%	2.9%	1.4%	5.3%	1.1%
Italy	23.5%	57.5%	6.8%	2.3%	0.6%	2.6%	5.4%	1.2%
Vietnam	13.6%	63.5%	3.7%	6.1%	0.3%	1.7%	8.9%	2.2%
Austria	28.4%	51.7%	10.2%	4.4%	2.1%	2.9%	-0.8%	1.1%
Great Britain	14.5%	62.5%	9.0%	2.2%	2.9%	2.1%	4.4%	2.5%
Ireland	17.1%	61.1%	7.6%	3.5%	2.0%	2.5%	5.3%	0.9%
Finland	22.2%	49.5%	10.3%	2.4%	2.5%	4.3%	7.7%	1.2%
Hungary	16.5%	58.8%	7.7%	3.6%	2.0%	4.2%	5.6%	1.7%
Germany	21.3%	57.3%	8.4%	4.0%	2.0%	3.1%	3.3%	0.6%
Czech. Rep.	13.9%	53.2%	11.8%	4.6%	1.1%	7.5%	6.9%	1.1%
Belgium	16.4%	63.7%	7.3%	3.2%	2.1%	2.4%	4.0%	0.8%
Sweden	16.4%	63.9%	9.2%	3.2%	3.0%	1.5%	1.7%	1.0%
France	18.2%	59.1%	7.0%	3.2%	2.6%	3.6%	5.0%	1.3%
Netherlands	16.7%	55.3%	7.8%	2.6%	2.2%	2.7%	11.7%	1.0%
Spain	12.8%	65.0%	6.0%	4.8%	3.0%	2.7%	4.7%	1.0%
Denmark	16.6%	61.3%	10.3%	3.2%	1.3%	2.5%	3.8%	0.9%
USA	15.2%	68.6%	6.3%	3.5%	1.6%	1.8%	1.1%	1.8%
Canada	20.6%	60.9%	7.2%	1.9%	2.0%	4.1%	1.3%	1.8%
Brazil (SC)	13.4%	72.7%	4.0%	3.4%	1.3%	0.7%	2.4%	2.2%
Brazil (MT)	15.0%	65.2%	6.9%	3.0%	3.1%	2.0%	2.3%	2.5%

Table C2. Profit advantage of select factors, all other variables held constant per breeding female basis 2024.

Country	Profit advantage over average (\$/female/year)	Market pig prices	Feed prices	Productivity	Fixed costs	Labor usage	Wage rates	Labor Usage and Wage Rates
Brazil (MT)	\$1,171.94	-\$1,446.28	\$1,365.84	\$180.45	\$493.43	-\$561.68	\$521.21	\$233.48
Vietnam	\$900.90	\$2,123.65	-\$998.64	-\$852.23	\$189.25	-\$1,811.06	\$586.61	\$236.18
Sweden	\$500.59	\$212.10	\$225.30	\$239.81	\$89.40	\$196.43	-\$313.18	-\$48.82
Spain	\$447.46	\$261.81	-\$83.96	-\$736.19	\$363.25	\$236.13	\$41.16	\$175.41
Italy	\$428.99	\$1,347.80	\$178.13	-\$1,002.74	-\$1,375.10	-\$187.05	\$52.07	-\$236.03
South Korea	\$396.91	\$4,575.38	-\$508.55	-\$1,401.81	-\$846.15	-\$184.26	\$347.35	\$108.14
Brazil (SC)	\$261.67	-\$1,401.71	\$89.68	\$485.48	\$423.44	-\$291.22	\$523.02	\$290.13
Japan	\$133.35	\$4,103.74	-\$1,872.61	-\$1,537.95	\$498.31	-\$206.31	\$159.07	-\$127.31
Belgium	\$28.13	-\$188.57	-\$105.78	-\$200.23	\$29.12	\$165.72	-\$95.24	\$26.85
Germany	-\$8.76	\$76.49	\$140.97	\$246.69	-\$318.20	\$138.42	-\$183.69	-\$61.34
France	-\$17.60	-\$354.91	\$220.38	\$166.07	-\$26.65	\$232.59	-\$206.18	\$58.05
Great Britain	-\$92.83	\$680.14	-\$634.14	\$72.56	\$106.04	\$97.40	-\$131.98	-\$82.38
Netherlands	-\$92.99	-\$564.74	\$251.73	\$754.45	\$34.61	\$270.16	-\$482.62	\$1.35
USA	-\$266.30	-\$1,193.86	\$382.11	-\$636.09	\$262.64	\$233.16	\$7.45	\$156.95
Czech. Rep.	-\$291.31	-\$339.08	\$348.48	\$910.99	\$156.78	-\$406.70	\$183.00	-\$252.12
Hungary	-\$344.34	-\$172.48	\$0.76	\$24.11	\$42.08	-\$220.82	\$290.54	\$21.04
China	-\$380.59	\$1,584.80	-\$1,742.74	-\$922.13	\$470.43	-\$262.37	\$477.64	\$237.43
Ireland	-\$406.56	\$74.47	-\$353.47	\$705.04	-\$57.61	\$93.63	-\$13.40	-\$5.17
Austria	-\$432.57	\$430.67	\$180.46	-\$192.97	-\$851.91	\$57.11	-\$218.91	-\$199.88
Finland	-\$578.41	-\$187.86	\$561.11	\$483.70	-\$348.61	\$48.24	-\$158.90	-\$166.53
Denmark	-\$607.47	-\$1,216.24	\$214.60	\$1,218.05	\$126.82	\$213.27	-\$452.32	-\$90.51
Canada	-\$750.22	-\$1,706.28	\$633.15	-\$259.11	-\$118.28	\$153.87	\$1.28	\$69.38