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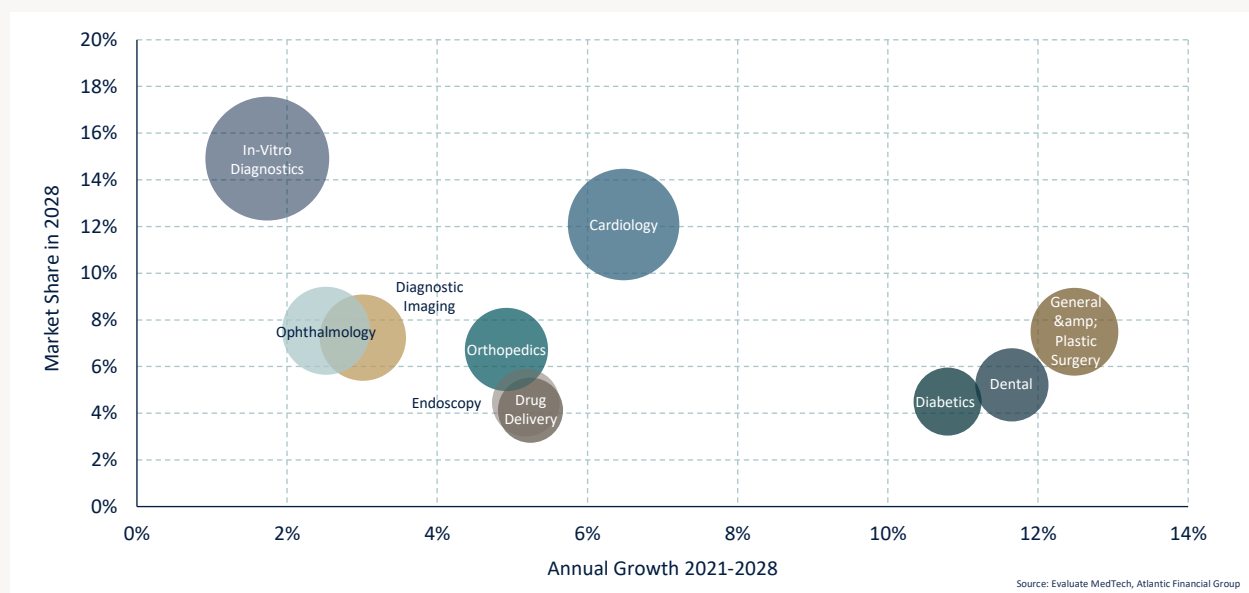
## Weekly Investment Focus

9 January 2023

### "MEDTECH AT THE BEDSIDE OF PATIENTS AND CARE GIVERS"

- ◆ MedTech is at the heart of medical innovation
- ◆ It promises to help reduce pressure on health care costs
- ◆ Artificial intelligence and machine learning become real medical tools and accelerate R&D
- ◆ The sector benefits from both strong growth and defensive qualities

#### CHART OF THE WEEK: "Market shares and growth of MedTech segments"



### FINANCIAL MARKET ANALYSIS

As we start a new year, **GE HealthCare**, a spin-off from General Electric, is becoming one of the largest MedTech companies in the world. **Several multinationals have IPO'd their MedTech activities over the last ten years to better focus on this growth sector and conquer new markets.** This is the case of **Abbott** (January 2013), **Danaher** (July 2016) and **Siemens Healthineer** (March 2018).



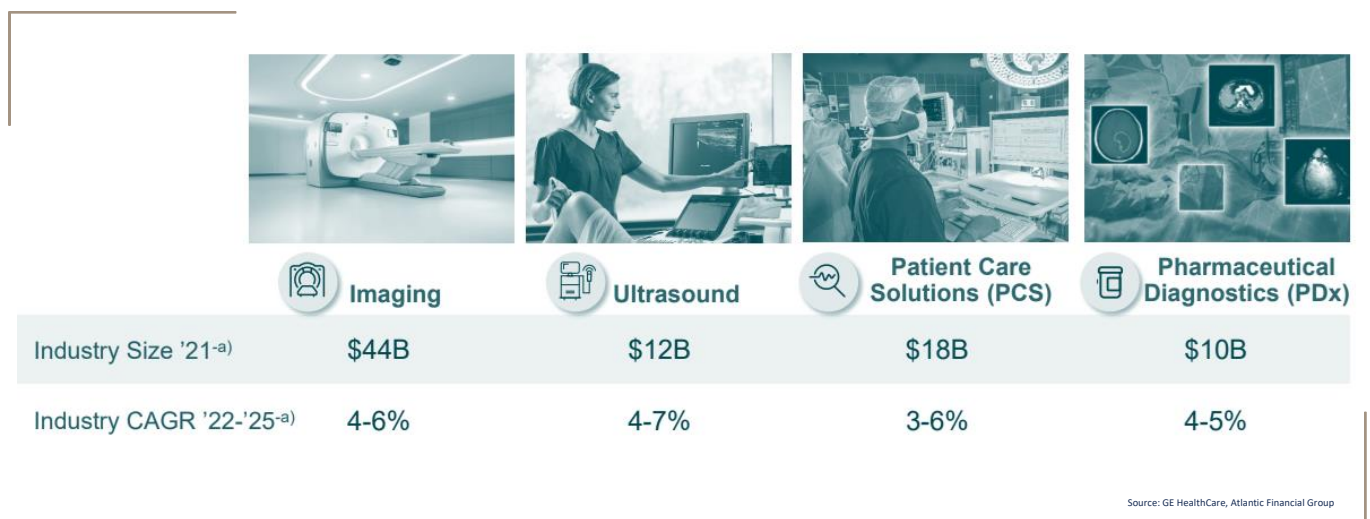
The medical technology sector, although an integral part of the defensive healthcare sector, **had a volatile year in 2022, down 23%, and underperformed the MSCI World.** The “Tech” side of the sector has been a heavyweight in the balance. However, the fundamentals remain good, with **the sector's leaders generating generous cash flows, allowing for the distribution of attractive dividends and the financial flexibility to proceed with new mergers and acquisitions.**

◆ MedTech is at the heart of medical innovation

The MedTech sector mainly comprises medical devices that simplify the prevention, diagnosis and treatment of diseases. The best known MedTech products include pacemakers, imaging devices, dialysis machines and implants. **The total size of the global medical technology market exceeds \$500 billion and is expected to grow c. 5.5% per annum.**

MedTech markets with strong growth prospects include medical imaging, ultrasound, patient care solutions and pharmaceutical diagnostics (see Fig. 2). By the end of 2021, these four markets alone accounted for 84 billion in revenue and could reach nearly 100 billion by 2025.

Fig. 2 - Selected MedTech markets covered by GE HealthCare



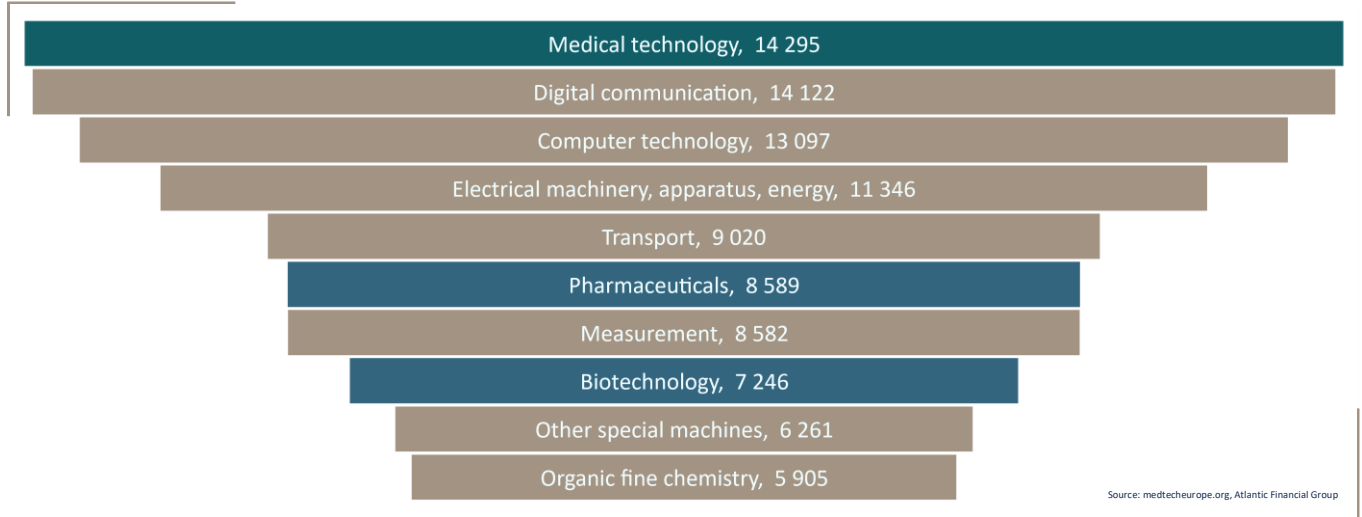
The MedTech sector innovates mainly within start-ups. According to the organisation MedTech Europe, there are more than 33,000 MedTech companies in Europe, most of which are based in Germany, Italy, the UK and France.

Medical technology is characterised by a constant flow of innovations, which are the result of a high level of R&D within the industry and close cooperation with users. **The average global R&D investment as a percentage of sales is estimated at c. 8% in the medical technology sector.** Products typically have a life cycle of only 18 to 24 months before an improved version is available. In 2020, almost 14,300 patent applications were filed with the European Patent Office (EPO) in the field of medical technology, a growth of 2.6% over the previous year (see Fig.3).



By comparison, 8 589 applications were filed in the pharmaceutical field and 7 246 in the biotechnology field. In the last decade, the number of filings at the EPO in the field of medical technology has doubled.

Fig. 3 - Patent applications filed with the EPO in 2020 for the top 10 technical fields



◆ It promises to help reduce pressure on health care costs

**The increase in healthcare spending, which accounts for about 10% of global gross domestic product (GDP), is outpacing the growth of the global economy.** According to the World Health Organisation (WHO), spending is rising faster in emerging countries, averaging 6% per year compared to 4% in developed countries. **The Covid-19 pandemic has accelerated the growth of healthcare spending** in recent years with the introduction of vaccine procedures and PCR tests, the addition of intensive care beds and the purchase of specialised equipment.

In addition, **the sector is chronically short of healthcare workers** and this trend has been accelerated by the pandemic. There could be a shortfall of 15 million healthcare professionals worldwide by 2030. **Medical technology is therefore seen as a way to improve the efficiency of caregivers and the patient experience.**

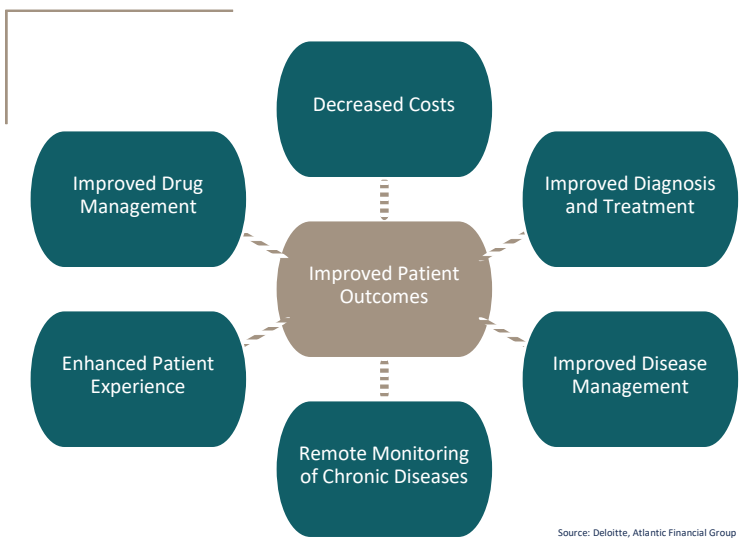
Medtech companies could play a major role. **Through digital technology, they have the potential to capture enormous value in healthcare systems around the world, with the benefit of improving care while driving down costs.** The McKinsey Global Institute estimates that **savings could be between \$1.5 - \$3 trillion per annum by 2030**, thanks to technologies such as remote monitoring, AI and automation (see Fig. 4).

In the United States, nearly 60% of healthcare organisations have already adopted **the Internet of Medical Things (IoMT)**, and have achieved cost savings, improved profitability, transparency and patient experience. Indeed, **the IoMT serves the financial interests of healthcare stakeholders, including investors, manufacturers, providers and physicians.**

The global IoMT market size is expected to reach \$187.6 billion by 2028, growing at 29.5% per year.



Fig. 4 - The benefits of the Internet of Medical Things



Examples of Internet of Things-enabled medical devices include medical data transfer tools, drug efficacy monitoring, remote care biometric scanners, air quality sensors, real-time glucose and blood pressure monitoring systems, remote temperature monitors, fitness wearables, sleep monitors, smart inhalers, connected contact lenses and robotic surgical equipment. These devices are typically equipped with artificial intelligence (AI) and machine learning (ML) technologies, cloud connectivity and sensors. Global MedTech leaders already have a strong presence in this segment.

**Siemens is a leading provider of IoT-based healthcare solutions.** The company specialises in digital health testing and solutions that enable quality patient care in cardiology, oncology and other clinical specialties. **Their cloud-based operating system, MindSphere, connects medical devices and systems with advanced analytics.**

**Medtronic, a global leader in medical devices, is continuously expanding its range of IoMT-enabled products** such as oximeters, portable ventilators, pacemakers, defibrillators and neurostimulators. One of the company's flagship products is the **Vital Sync™** monitoring and clinical decision support (CDS) solution, **which provides remote patient monitoring, electronic medical record (EMR) connectivity and alarm management.**

**GE Healthcare, is committed to digitising healthcare infrastructure and specialises in imaging, diagnostic and patient monitoring devices and solutions.** Its remote patient monitoring solution, named **CARESCAPE™ ONE**, is a monitor designed with IoT technology and provides uninterrupted data from multiple care areas with high flexibility and seamless connectivity.

◆ **Artificial intelligence and machine learning become real medical tools and accelerate R&D**

As technology continues to advance in all aspects of healthcare, **software incorporating artificial intelligence (AI), and more specifically machine learning (ML), is being integrated into an increasing number of medical devices.** One of the advantages of ML is its ability to create new information from large amounts of data generated in the course of providing healthcare to patients. This facilitates medical decision making and improves the quality of care.



## AI and machine learning in the MedTech field are used in particular to:

- **Diagnose and detect disease** through the analysis of medical images (such as X-rays or MRIs) to notice abnormalities or signs of disease.
- **Treat response prediction:** AI will predict a patient's response to a particular treatment by analysing their health data and comparing it with that of other patients who have received the same treatment.
- **Manage health:** AI will monitor a patient's health status and provide personalised health advice. It can also manage medical appointments and medication prescriptions.
- **Perform medical research:** AI can analyse large amounts of medical data and help discover new associations between different health factors and diseases.

The US Food & Drug Administration (FDA) **is approving more medical devices with AI/ML every year** (see Fig. 5). Among these is Medicalgorithmics' DeepRhythmAI, whose AI reduces the time needed to make a complete and accurate diagnosis. The group is developing algorithms for the automated analysis of cardiac CT images used in the non-invasive diagnosis of coronary heart disease. AI thus increases the survival and recovery rate of patients.

Fig. 5 - Example of medical devices incorporating AI/ML devices, approved by the FDA

Artificial Intelligence and Machine Learning (AI/ML)-Enabled Medical Devices   FDA			
Date of Final Decision	Device	Company	Panel (Lead)
07/29/2022	Deep Learning Image Reconstruction	GE Healthcare Japan Corporation	Radiology
07/27/2022	DeepRhythmAI	Medicalgorithmics S.A.	Cardiovascular
07/22/2022	Vivid E80, Vivid E90, Vivid E95	GE Medical Systems Ultrasound and	Radiology
07/22/2022	EchoPAC Software Only, EchoPAC Plug-in	GE Medical Systems Ultrasound and Primary Care Diagnostics,	Radiology
07/19/2022	Study Watch with Irregular Pulse Monitor (Home), Study Wat	Verily Life Sciences LLC	Cardiovascular
07/19/2022	ZEUS System (Zio Watch)	iRhythm Technologies, Inc.	Cardiovascular
07/19/2022	BrainInsight	Hyperfine, Inc.	Radiology
07/13/2022	syngo.CT Extended Functionality	Siemens Medical Solutions USA, Inc.	Radiology
07/06/2022	MinuteFul - kidney test	Healthy.io Ltd.	Clinical Chemistry
06/29/2022	Eko Murmur Analysis Software (EMAS)	Eko Devices, Inc.	Cardiovascular
06/29/2022	V8 Diagnostic Ultrasound System, V7 Diagnostic Ultrasound S	Samsung Medison Co., Ltd.	Radiology
06/27/2022	Venue Fit	GE Medical Systems	Radiology
06/23/2022	CoLumbo	Smart Soft Healthcare AD	Radiology
06/21/2022	Venue Go	GE Medical Systems Ultrasound and Primary Care Diagnostics	Radiology
06/17/2022	IDx-DR v2.3	Digital Diagnostics Inc.	Ophthalmic

Source: FDA, Atlantic Financial Group

### ◆ The sector benefits from both strong growth and defensive qualities

The MedTech sector, like the healthcare sector as a whole, is **benefiting from strong demographic factors**. The rise of the middle class in emerging countries and the ageing of the world's population are increasing the demand for quality healthcare in many areas such as cardiology, orthopaedics, diabetes and medical imaging, among others (see Chart of the Week).

The growth of the sector is also heavily influenced by technological advances and innovations that make products more efficient or less expensive.



The medical technology industry, with the exception of plastic surgery or dental and orthodontic care, is therefore **not very sensitive to economic cycles**. The number of cardiac surgeries, although slowing during the Covid-19 pandemic and when operating rooms closed, has returned to its usual pace.

**The major MedTech companies have realised that to achieve stable growth, they must not only produce high-performance devices but also add digital functionalities such as continuous monitoring, intelligent diagnostics and prevention.**

**Growth will also continue to be achieved through acquisitions, fuelled by a pool of highly innovative start-ups and the significant cash available for investment.** Periods of macroeconomic uncertainty have traditionally been favourable for investment in the healthcare sector, due to the resilience of the market.

### **Conclusion:**

MedTech promises to fill many of the gaps in the healthcare system, but also to help prevent serious forms of cancer and other chronic diseases through better patient management, earlier diagnosis and more targeted treatment. The digitisation of medicine is accelerating and could help to reduce some of the costs that are often caused by red tape. If the sector continues to demonstrate its potential for better clinical and financial outcomes, the next few years should see the blossoming of medical technologies.





## RETURN ON FINANCIAL ASSETS

Markets Performances (local currencies)	Last Price	Momentum Indicator (RSI)	1-Week (%)	1-Month (%)	2023 Year-to-Date (%)	2022 (%)	2021 (%)
<strong>Equities</strong>							
World (MSCI)	617.4	56.16	2.0%	-0.1%	2.0%	-18.0%	19.0%
USA (S&P 500)	3 895	51.61	1.5%	-1.0%	1.5%	-18.1%	28.7%
USA (Dow Jones)	33 631	54.88	1.5%	0.2%	1.5%	-6.9%	20.9%
USA (Nasdaq)	10 569	46.91	1.0%	-4.0%	1.0%	-38.5%	22.2%
Euro Area (DJ EuroStoxx)	432.5	64.89	5.6%	2.4%	5.6%	-11.4%	23.5%
UK (FTSE 100)	7 699	69.27	3.3%	2.5%	3.3%	4.6%	18.4%
Switzerland (SMI)	11 145	58.38	3.9%	0.3%	3.9%	-14.3%	23.7%
Japan (Nikkei)	25 974	33.31	-0.5%	-6.7%	-0.5%	-7.4%	6.7%
Emerging (MSCI)	989	66.67	3.4%	1.7%	3.4%	-19.9%	-2.3%
Brasil (IBOVESPA)	108 964	52.69	-0.7%	-1.1%	-0.7%	4.7%	-11.9%
Russia (MOEX)	2 168	50.26	0.1%	0.8%	0.1%	-36.9%	21.9%
India (SENSEX)	60 679	36.78	-1.5%	-4.4%	-1.5%	5.8%	23.2%
China (CSI)	4 013	64.44	2.8%	0.5%	2.8%	-18.8%	-3.5%
Communication Serv. (MSCI World)	73.18	61.94	3.9%	1.2%	3.9%	-35.3%	10.9%
Consumer Discret. (MSCI World)	288.4	57.23	4.0%	-1.3%	4.0%	-31.6%	9.2%
Consumer Staples (MSCI World)	271.7	59.45	1.7%	0.6%	1.7%	-6.0%	11.7%
Energy (MSCI World)	240.2	51.36	-0.3%	1.1%	-0.3%	34.1%	37.5%
Financials (MSCI World)	136.2	65.08	3.1%	2.9%	3.1%	-9.2%	25.1%
Health Care (MSCI World)	343.4	52.89	0.3%	0.0%	0.3%	-5.7%	18.0%
Industrials (MSCI World)	290.4	59.28	2.4%	1.0%	2.4%	-12.7%	16.6%
Info. Tech. (MSCI World)	395.6	47.24	0.8%	-3.8%	0.8%	-30.9%	27.6%
Materials (MSCI World)	323.7	63.14	3.8%	0.9%	3.8%	-11.0%	15.4%
Real Estate (MSCI World)	176.8	56.69	2.6%	1.2%	2.6%	-24.0%	23.6%
Utilities (MSCI World)	153.2	56.63	1.1%	1.0%	1.1%	-3.8%	11.1%
<strong>Bonds (FTSE)</strong>							
USA (7-10 Yr)	3.59%	59.60	2.2%	-0.2%	2.2%	-14.5%	-2.4%
Euro Area (7-10 Yr)	2.90%	50.96	3.1%	-3.1%	3.1%	-18.4%	-2.9%
Germany (7-10 Yr)	2.24%	48.91	2.5%	-3.1%	2.5%	-17.8%	-2.7%
UK (7-10 Yr)	3.47%	50.36	1.5%	-2.5%	1.5%	-11.1%	-4.9%
Switzerland (7-10 Yr)	1.34%	51.61	2.3%	-2.2%	2.3%	-12.5%	-2.3%
Japan (5-10 Yr)	0.51%	29.64	0.0%	-1.4%	0.0%	-2.8%	0.0%
Emerging (5-10 Yr)	7.92%	60.07	0.8%	-0.2%	0.8%	-14.4%	-2.3%
USA (IG Corp.)	5.19%	61.21	2.0%	0.1%	2.0%	-18.8%	-1.0%
Euro Area (IG Corp.)	4.08%	53.93	1.4%	-0.9%	1.4%	-18.6%	-1.0%
Emerging (IG Corp.)	7.50%	79.93	1.5%	1.7%	1.5%	-14.9%	-3.0%
USA (HY Corp.)	8.43%	65.56	2.2%	0.9%	2.2%	-11.2%	5.3%
Euro Area (HY Corp.)	7.75%	67.21	1.1%	0.3%	1.1%	-10.6%	3.4%
Emerging (HY Corp.)	10.74%	74.27	1.5%	1.9%	1.5%	-14.4%	-3.2%
World (Convertibles)	362.9	57.23	1.2%	0.2%	1.2%	-18.2%	2.4%
USA (Convertibles)	480.0	53.35	1.3%	-0.4%	1.3%	-20.1%	3.1%
Euro Area (Convertibles)	3 523	45.80	-0.1%	-0.8%	n.a.	-14.2%	-0.3%
Switzerland (Convertibles)	173.8	54.59	1.0%	-0.7%	1.0%	-7.5%	-0.5%
Japan (Convertibles)	197.3	39.58	-0.3%	-0.6%	-0.3%	-1.3%	3.3%
<strong>Hedge Funds (Crédit Suisse)</strong>							
Hedge Funds Indus.	734	55.59	n.a.	0.3%	n.a.	1.0%	8.2%
Distressed	924	53.75	n.a.	-0.5%	n.a.	-4.5%	12.5%
Event Driven	758	52.21	n.a.	0.9%	n.a.	-6.7%	12.9%
Fixed Income	384	58.18	n.a.	0.3%	n.a.	-2.3%	5.2%
Global Macro	1412	65.61	n.a.	-4.9%	n.a.	17.1%	9.6%
Long/Short	872	46.94	n.a.	3.7%	n.a.	-5.9%	8.3%
CTA's	403	66.76	n.a.	-4.6%	n.a.	18.0%	8.2%
Market Neutral	290	59.87	n.a.	1.6%	n.a.	-0.1%	6.2%
Multi-Strategy	709	63.77	n.a.	1.1%	n.a.	1.7%	7.0%
<strong>Volatility</strong>							
VIX	21.13	45.72	-2.5%	-4.7%	-2.5%	25.8%	-24.3%
VSTOXX	18.49	37.31	-11.5%	-11.2%	-11.5%	8.4%	-17.6%
<strong>Commodities</strong>							
Commodities (CRB)	547.5	n.a.	-1.3%	-2.4%	-1.3%	-4.1%	30.3%
Gold (Troy Ounce)	1 874	67.23	2.8%	4.3%	2.8%	-0.3%	-3.6%
Oil (WTI, Barrel)	73.77	40.92	-8.1%	-0.7%	-8.1%	4.3%	58.7%
Oil (Brent, Barrel)	78.62	42.65	-9.2%	-1.9%	-9.2%	9.7%	51.4%
<strong>Currencies (vs USD)</strong>							
USD (Dollar Index)	103.66	40.85	0.1%	-1.1%	0.1%	8.2%	6.4%
EUR	1.0674	58.63	0.1%	1.3%	-0.3%	-5.8%	-7.5%
JPY	132.24	58.42	-1.1%	3.3%	-0.8%	-12.2%	-10.2%
GBP	1.2134	54.46	0.7%	-1.0%	0.4%	-10.7%	-1.0%
AUD	0.6916	61.70	1.7%	1.8%	1.5%	-6.2%	-5.6%
CAD	1.3415	57.83	1.2%	1.7%	1.0%	-6.8%	0.7%
CHF	0.9255	57.74	0.1%	0.9%	-0.1%	-1.3%	-3.0%
CNY	6.7738	76.70	1.8%	2.7%	1.8%	-7.9%	2.7%
MXN	19.121	67.15	1.8%	3.4%	2.0%	5.3%	-3.0%
EM (Emerging Index)	1 669.6	75.20	0.5%	1.7%	0.5%	-4.3%	0.9%

Source: Bloomberg, Atlantic Financial Group

Total Return by asset class (Negative \ Positive Performance)



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